

PERSPECTIVES on Science and Christian Faith

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The pages of *Perspectives on Science and Christian Faith (PSCF)* are open to original, unpublished contributions that interact with science and Christian faith in a manner consistent with scientific and theological integrity. A brief description of standards for publication in *PSCF* can be found in the editorial of the December 2021 issue. This is available at www.asa3.org → PUBLICATIONS → PSCF Academic Journal. Published papers do not reflect any official position of the American Scientific Affiliation.

1. Submit all manuscripts to: **James C. Peterson, Editor, Roanoke College, 221 College Lane, Salem, VA 24153.** E-mail: jpeterson@roanoke.edu. Submissions are typically acknowledged within 10 days of their receipt.
2. Authors must submit **an electronic copy of the manuscript formatted in Word** as an email attachment. Typically 2–3 anonymous reviewers critique each manuscript considered for publication.
3. Use endnotes for all references. Each note must have a unique number. Follow *The Chicago Manual of Style* (16th ed., sections 14.1 to 14.317).
4. While figures and diagrams may be embedded within the Word text file of the manuscript, authors are required to also send them as individual electronic files (JPG or PDF format). Figure captions should be provided as a list at the end of the manuscript text.

ARTICLES are major treatments of a particular subject relating science to a Christian position. Such papers should be at least 2,000 words but **not more than 8,000 words in length**, excluding endnotes. An abstract of 50–150 words and a list of 5–15 keywords are required and should be in both the text of the email submission and at the beginning of the attached essay.

COMMUNICATIONS are focused personal examples of how people are living out science and Christian faith. They have ranged from bringing computers to areas with no power, to being married to an experimental physicist, to an astronomer's sermon on the heavens telling the glory of God, to serving as president of a research university.

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James C. Peterson

Learning from Authors around the Globe

The first issue of *PSCF* (then the *A.S.A. Bulletin*) appeared January 7 of 1949, and said it planned to give “the benefit of constructive criticism and Christian evaluation of papers presented and of reviews of books of great interest or strategic importance.” That issue was printed in Chicago, but by 1973, there were enough Canadians in the ASA to form in close association the Canadian Scientific and Christian Affiliation. *PSCF* is still centered in North America, but science and the Christian faith have gone global. There are more Anglican church members now in Nigeria than in England. It appears that as many Christians join for worship in China on a Sunday morning, as in the United States.

Serving that global movement, we are happy that *PSCF* is read by fellow Christians around the world, and that we have the opportunity to learn from them. Just looking at the last twelve months of *PSCF* articles as an example, 56% of those articles were from authors in the USA, 12% from Canada, and 31% from beyond North America. Countries with single article contributions included France, New Zealand, Scotland, Italy, and Peru. While English is amazingly pervasive as the world’s most widely used second language, one of the means for commerce, diplomacy, and scholarship, it is not unusual to receive requests to translate *PSCF* articles into other languages. Recently we welcomed translating a *PSCF* article into Polish for a new book titled *Debaty nad pochodzeniem: Ujęcie historyczne, filozoficzne i naukowe*, and an article into Italian by the Institute for Fundamental Theology at the Pontifical University of the Holy Cross in Rome. The latter requested a *PSCF* article by Enrico Cantore published in December 1985. Now that is a long shelf life!

Wherever they live, our readers each have unique expertise that could be helpful to the rest of us. Take the time to write that up, test it out with colleagues that you know, perhaps from a local ASA or CSCA chapter, or from far-flung annual meetings of your professional societies, or from across the internet. The editorial of the December 2021 issue lines out what *PSCF* is looking for in its published articles. When you think you have something well honed to

serve a wider audience, send it in for potential peer review and publication. Twice a year we do variety issues that gather an impressive array of articles from unsolicited manuscripts. Usually twice a year we do theme issues gathered from calls such as the one in this issue.

If you want to contribute at a shorter length, communications are focused personal accounts of how people are living out science and Christian faith. In brief, the author describes a particular point of service: from working as president of a research university, to being married to a physicist, to developing uses for formerly discarded coconut husks in order to raise the income of subsistence coconut farmers ...

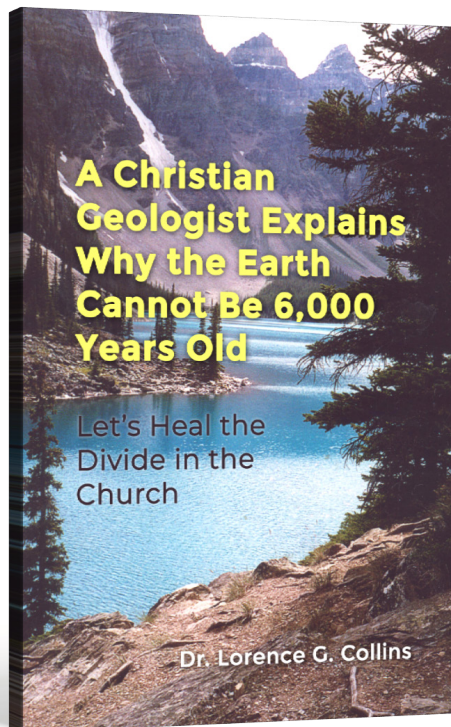
In addition, the readers of *PSCF* have long appreciated the many insightful book reviews published within its covers. If you would be open to being asked to contribute to this interesting and important service of writing a book review, please send a brief email to our Book Review Editor Stephen Contakes at scontakes@westmont.edu. Describe your areas of expertise and preferred mailing address. This information will be entered into a database that will bring you to the attention of the editor of a specific subject area, when a book of interest to you and *PSCF* readers becomes available for review. Of course, if a book is offered to you, you would still be able to accept or decline receiving the book at that particular time. Also, the subject area editors are glad to receive recommendations of books that *PSCF* should consider reviewing. Their email addresses are listed inside the front cover of every issue.

Letters to the editor are immediate and focused. They quickly make a specific and important point in relation to a just-published article or review. The letters selected for publication are often then followed by a response from the original author.

So, thanks and appreciation to our readers and authors wherever you have been called to serve. Keep thinking and writing to contribute further to your fellow readers at *PSCF*. ◀

James C. Peterson, *Editor-in-Chief*

A Christian Geologist Explains Why the Earth
Cannot Be 6,000 Years Old:
Let's Heal the Divide in the Church



Dorrance Publishing, \$45.00

By understanding how God has created, Christians can be better stewards of Earth and its life. Written by a committed Christian, this approachable book addresses a number of scientific topics:

- examples of supposed Intelligent Design (ID); and dependable natural laws
- evidence that young-earth and worldwide flood views are inaccurate
- the Grand Canyon, radiometric dating, evolution, and more!

Dr. Lorence G. Collins is a retired professor of geology, having taught at California State University Northridge. In addition to geology, he taught mineralogy, petrology, and photogeology for 33 years.





Camden L. Baucke



Lauren S. Seifert

Reflective Practice and Faith Integration: An Example from Psychology That Can Be Applied Across Disciplines

Camden L. Baucke and Lauren S Seifert

Although faith integration has been part of Christian ministry and pastoral counseling, it has not been included as much in clinical research, training, and practice in psychology, secular counseling, or most health professions. Reasons for exclusion include secular ethics and licensing criteria, but Christian faith can inform research and professional practice – even in secular contexts. Previous authors have discussed the integration of faith with medical practice: in some settings, using providential intervention; and in eldercare, using religious coping. This article extends that work to consider faith integration with reflective practice. Sacrifice of one’s own perspective to peer inside the worldview of another, for the sake of healing, not only provides pragmatic improvements to care, but also correlates with God’s commandments to love one another. Relevant techniques of reflective practice increase the quality of care given by all healthcare professionals. Many faith-integration techniques presented in this article can be applied to disciplines across the arts, sciences, and humanities.

Keywords: reflective practice, psychology, faith integration, adult hydrocephalus, case study

A Faith Divide: Pastoral Counseling versus Psychology and Secular Counseling

Historically, pastoral counseling and Christian ministry have included the integration of faith in training and practice.¹ Psychology, secular counseling, and healthcare professions have not. Clergy and pastoral counselors have many tools for infusing their work with lessons from scripture and theology.² Among the supports for their work was the American Association of Pastoral Counselors (AAPC), which provided continuing education and resources; AAPC merged with the Association for Clinical Pastoral Education in 2019, to pool their efforts in supporting faith integration in pastoral care/counseling.³ The same cannot be said for secular counseling and psychology or for the healthcare profes-

sions, which have maintained boundaries between a professional’s faith journey and disclosure about it in therapeutic and research environments. For example, codes of ethics in secular counseling and psychology generally prohibit practitioners from discussing personal values and views, such as faith, with their clients.⁴ While there is an organization to support Christian faith integration in psychology

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and counseling, less than 1.5% of all licensed psychologists in the United States belong to it.⁵

Secular medicine and health care are similar to psychology. Medical ethics advise against sharing one's faith in medical practice, but a small proportion of medical professionals do belong to organizations with a Christian mission in medical care.⁶ Moreover, a few Christian scholars have indicated opportunities and needs for training physicians to integrate faith into their work within faith-based health networks,⁷ and others have emphasized the importance of collaborations between stakeholders in client care (secular collaborations, which could be expanded to include faith-integration).⁸ Overall, in psychology, secular counseling, and health care (henceforth referred to as "clinical practice and research settings"), there is a "faith divide" between religiously affiliated contexts and secular care settings in terms of the integration of faith, but we propose that Christian clinicians and researchers *can* integrate faith without violating their professions' codes of conduct, even in secular environments.

For professionals who are active Christians, Christ must be at the center of everything—whether work or leisure. Yet, in secular research and practice, one may struggle to integrate faith while observing the practice ethics of her or his profession. How can one fully integrate faith into work with clients and research participants? Previous writers have integrated faith with medical practice, providential intervention,⁹ and religious coping in dementia care.¹⁰ The present authors propose reflective practice as a means by which Christian values and secular expertise can be considered together in ways that increase self-awareness, heighten understanding of others, and improve care. An illustrative case follows to indicate how faith can be integrated, even in secular research and practice. Before we describe that exemplary case of reflective practice, we will briefly recount prior contributions to faith integration in our field (psychology).

Previous Work on Faith Integration in Psychology and Related Fields

Integration of faith and psychology is not a new concept, as previous authors have identified avenues for it to occur. Heather Looy expanded upon the connection between science and a faith-derived

worldview,¹¹ but identified a barrier between clinician and client when she stated:

Science and scientists are given great authority and power in modern Western culture ... the culture of psychology convinces its students that these worldview beliefs are objective, verifiable truths. Yet as long as psychologists claim that they can discover fully objective truths about human behavior, they risk failing to notice the limits and distortions of their knowledge and close their minds to other potentially fruitful ways of coming to self-understanding. The refusal to acknowledge that everyone has a "view from somewhere" also creates difficulties for Christians who engage psychological science expressly from a Christian worldview.¹²

The authority in clinical practice and research settings, in combination with a Christian worldview, can be misused. A clinician could intentionally or mistakenly let a sense of power and/or expertise interfere with client progress. The potential consequences of such integration are explored by D. Russell Bishop in his article "Integrating Psychology and Christianity: A Biographical Sketch of Mary Stewart Van Leeuwen."¹³ Bishop described Van Leeuwen as critically integrating Christian values into evolving issues of the discipline, and the issues that she evaluated were "at the heart of psychology."¹⁴ The connection between knowing right and doing right was a balance portrayed by Van Leeuwen (that is, following the processes delineated by Kirk E. Farnsworth¹⁵), and Bishop noted this as "a valuable strategy for other Christian professionals no matter what their discipline may be."¹⁶

David Myers, in his article "Yin and Yang in Psychological Research and Christian Belief," stated that the clinician should give a form of grace, where the client can feel accepted and free from the requirements for any achievements or prestige.¹⁷ This grace is Christ-like because it imitates the grace Jesus showed by selflessly giving his life, without requiring anything from us. A clinician's intent, in a fashion that emulates Christ's, necessitates a person-centered approach. One's focus should be on Christ's will as she or he works to be the Lord's instrument in helping provide care for the client. Being Christ-focused and person-centered at the same time may seem contradictory; the current authors address this in the section about "Rigor and Authenticity," below.

As noted above, pioneers in the integration of behavioral science and faith have identified the influence of one on the other. Walter Hearn stated that psychology must be the “handmaiden of Christianity.”¹⁸ The integral connection between the two manifests as a shared orientation toward clients, those at the mercy of the clinician. Psychology researchers and practitioners alike must make themselves subject to the will of God and his mercy in order to be humbled and serve clients more completely; for example, in 2 Corinthians 10,¹⁹ one finds a combination of authority that comes from working to make every thought captive to God’s perfect wisdom (verse 5) with humility (verse 13) that is appropriate to the specific work that God has set before a person. Furthermore, the letter is person-centered; that is, it is tailored to the needs of the readers in Corinth. In order to make reflective practice subject to Christ, the practitioner or researcher must seek God’s will in humility while considering the confines of the work that God has set before her or him, along with the needs of the client (that is, as in the example in 2 Corinthians, above).

Lauren Seifert and Melinda Baker explored this approach in religious coping with persons with Alzheimer’s disease, in which stakeholder relationships with the practitioner or caregiver are paramount to the success of interventions.²⁰ They noted key verses in scripture to prescribe behaviors toward clients, with a person-centered approach: Luke 10:25–37 and Matthew 25:34–40 (NIV, below) exemplify the grace given by God:

Then the King will say to those on his right, “Come, you who are blessed by my Father; take your inheritance, the kingdom prepared for you since the creation of the world. For I was hungry and you gave me something to eat, I was thirsty and you gave me something to drink, I was a stranger and you invited me in, I needed clothes and you clothed me, I was sick and you looked after me, I was in prison and you came to visit me.”

Then the righteous will answer him, “Lord, when did we see you hungry and feed you, or thirsty and give you something to drink? When did we see you a stranger and invite you in, or needing clothes and clothe you? When did we see you sick or in prison and go to visit you?”

The King will reply, “Truly I tell you, whatever you did for one of the least of these brothers and sisters of mine, you did for me.”

As Seifert and Baker stated, through the application of scripture, extending Jesus’s love toward others will spread and continue his grace. This love can be taken into clinical practice and research settings.²¹

The aforementioned authors provided a foundation for the application of faith in psychology and related professions. Their work points to uniting Christ-centeredness and person-centeredness in practice. In essence, one can combine two great commandments: “... love the Lord your God with all your heart and with all your soul and with all your strength and with all your mind” and “love your neighbor as yourself” (Luke 10:27; Leviticus 19:18). The present authors have identified reflective practice as a way to explore faith and the person-centered approach in psychological science and practice; this can lead to more-effective application of God’s will in concert with professional expertise in clinical practice and research settings. As was mentioned, faith integration with reflective practice can be applied across disciplines to one’s interactions with clients, patients, research participants, colleagues, administrators, and students, as well as with laypersons.

What Is Reflective Practice?

The goal of reflective practice is to learn and improve one’s practices (usually pertaining to professional work). This occurs in clinical practice and research settings through dissecting one’s performance and client context. A clinician performs duties and then presents the details of the case to their supervisor or supervisory group.²² Donald Schön has served as an architect of reflective practice, outlining its organization as relationship centered and intentional.²³ Awareness, openness, and humility are needed to continuously improve one’s practice, and these three are used repeatedly as one engages in reflection on what has happened and how it might have turned out differently.²⁴ If one does not recognize that an outcome could have occurred differently, that event may reinforce unaddressed biases and perpetuate maladaptive or ineffective behaviors.²⁵ Reflective practice has been widely used among clinicians and their trainees,²⁶ but what distinguishes reflective practice from other awareness-based training models such as reflexivity or standard multicultural training? The latter two may be part of reflective practice, but they are not equivalent to it.

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Reflexivity is a research practice for increasing self-awareness to improve cognizance as well as to maintain ethical practice.²⁷ While the distinctions between reflectivity and reflexivity are enduringly debated, this article's use of reflective practice is differentiated by its target and implementation. Reflexivity involves cycles of practice, evaluation, and improving performance. There are various types of reflexivity, but it is epistemic reflexivity that we find in reflective practice. Reflexivity dwells on what is unknown,²⁸ while reflective practice dwells on what is known. As a tool in reflective practice, epistemic reflexivity may open one up to further evaluate assumptions, beliefs, perceptions, motivations, and behaviors. Multicultural training is another method akin to reflective practice; however, its implementation occurs before or after reflective practice. This purely educational experience is also limited in its broad scope of application whereas reflective practice can approach the entirety of a unique client-clinician interaction. It is common for reflective practice to include epistemic reflexivity, and it may lead to multicultural training if biases have been exposed which indicate it is needed.

Our Reflective Process

For us, reflective practice was critical, cyclical, and cumulative as we worked to improve our performance with a particular client from week to week. After sessions with the client, the first author reviewed his notes and consulted with his supervisor (the second author); the goal of these discussions was to evaluate client performance and progress and to expose biases in the first author's perceptions which might lead him to sub-optimal care or errors. Epistemic reflexivity was part of our deliberations, as we repeatedly questioned our perceptions and our motives and the ways that they manifested in actions that affected the client and his care. And this is where faith entered our reflective process. For the authors, an edifying and personal chapter is 2 Corinthians 10, which recommends humility. Our reflection is prayerful, with the hope that the resulting thoughts and behaviors are God's will.

An Illustrative Case

This exemplary case study involved "neurocognitive work" in a twelve-week regimen of memory assessments and cognitive tasks for an eighty-five-

year-old, white male post-surgical participant with adult hydrocephalus (after ventriculoperitoneal [VP] shunt placement). Weekly visits consisted of asking the client/patient/participant (which, for the sake of uniformity and clarity, will be called "client") to state any self-perceived challenges in emotional, cognitive, or physical status; he also completed several trials of a mobile trail-making task. The client was provided (verbally) with a sentence or a counting/math problem and asked to walk to large pages on the floor that represented the word-by-word order of the sentence or number-by-number order of the counting/math problem and its solution. This mobile trail-making task helped the client with locomotion as well as with cognition. Additional exercises included trivia (for example, about age-relevant music titles and apothegms) and making "small talk." The client's surgeon commented that trail-making and similar tasks were "absolutely necessary" for the client's recovery.

The authors engaged in meetings for reflective practice during the weeks of the case study and afterward. Topics for discussion in reflective practice sessions included questions of client assessment, challenges during the client's rehabilitation, and ways to incorporate faith into work with the case-study participant. We began our sessions as Christ-followers with a call to reflection, shown both in scripture (for example, Romans 12:2) and by the nature of Jesus's actions (for example, in the desert, Matthew 4:1-11; and on the Mount of Olives, Luke 22:39-44). Discussions were structured to regard the behaviors of the client, behaviors of the client's spouse (who was sometimes present at sessions, especially at the beginning or end), perceptions and actions of the first author in regard to the client, perceptions of the supervisor, and ways that scripture might inform and assist as we addressed our concerns in relation to all aspects of the case.

An important part of our discernment during reflective practice was the supervisor's use of questioning to help the first author gain insights about his self-awareness and regarding his examinations of his interactions with the client. A vital aspect of the first author's reflective practice was his tendency to apply relevant scripture when conversing about particular elements in the case. Furthermore, both authors were prayerful about their reflections, discussions, and about the first author's interactions with the cli-

ent. We asked the Lord to enter all of our work and improve it. In scripture, God provides general guidelines for our behaviors, and in calling upon him, we asked that this guidance would be specifically and deliberately applied to the first author's case. For us, self-awareness through reflective practice became the bridge between our faith and our work.

Taking the time to be held accountable for one's actions shines light on opportunities to behave more professionally and faithfully. Utilization of reflective practice is an action that not only offers enhanced therapeutic outcomes for clients, but also allows clinicians and clinical researchers to act in a self-sacrificial manner modeled after Jesus's own sacrifice and his commandments. We will refer to the foregoing case description in our discussion of faith integration with secular professional perspectives and practices.

How Can Faith Integration and Reflective Practice Improve Clinical Research and Practice?

In reflective practice regarding the illustrative case of a participant with adult hydrocephalus, the present authors examined their professional practices and their faith. First, reflective practice must be *regular* and *pervasive* to practically improve outcomes. Research and practice are fundamentally progressive, and there is a demand for efficiency and effectiveness.²⁹ Therefore, reflective practice serves as a structured learning tool that can be used to improve outcomes. Intrapersonal awareness and interpersonal understanding, as additions to clinical practice and research, are crucial to client outcomes.³⁰

In order to assist the reader in understanding how faith integration can happen with reflective practice, below are discussions of three fundamental aspects of clinical research and practice: (1) bedside manner; (2) rigor and authenticity; and (3) professional growth. In turn, each is discussed along with faith integration in the illustrative case.

Bedside Manner

Bedside manner is the etiquette and concern mental health and healthcare professionals show when approaching their client(s). This concept originated as far back as 1869, and it was the literal manner a researcher or clinician portrayed while at a client's

bedside.³¹ However, a lack of bedside manner creates a division between client and professional, building a barrier to quick and efficient outcomes. For some clinicians, high expertise may lead them to behave in arrogant or forceful ways. Reflective practice may improve a practitioner's awareness and reduce such attitudes and behaviors. This may increase good rapport with clients and advance understanding. Overall, it may lead to positive outcomes. For example, reflective practice might enhance a practitioner's empathy and her or his ability to assuage client fears. Through enhanced understanding, both stakeholders might collaborate more effectively.

It is common practice for psychotherapists to reflect on their treatment of a client and adjust their behaviors accordingly. However, there is limited literature on applying faith-based values to reflective practice in psychology. While practitioners may have adapted to certain methods of treating clients, using reflective practice *with faith-integration* warrants additional illustration.

In the case of the man with adult hydrocephalus, the current authors went to the participant's home and conducted exercises, assessments, and education. The client was also seeing other health providers: physicians, an occupational therapist, and nursing staff. Through reflective practice, the first author identified characteristics about himself that could be intimidating (for example, large frame, muscular build, youthful [20-year-old] appearance compared to the smaller frames of the octogenarian client and his spouse-caregiver). Careful consideration led to adoption of styles of behavior and speaking that reduced any perceived threat and improved rapport (such as sitting down with the client and his wife, rather than standing over them when speaking). Furthermore, reflective practice included prayer and consideration of scripture that could guide the first author's behaviors when he was next with the client (as mentioned above, Luke 10:27). Together, prayer and reflection led the first author to seek rapport with the client and God's will in the situation, while being attentive to the client's own wishes and fears.

Rigor and Authenticity

Reflective practice serves as a refining technique in clinical practice and research settings, as a professional sifts through emotional and cognitive details in a working alliance. Uncovering these details can

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signal physiological or behavioral changes with specific sensations, and it is important to acknowledge them. In addition, taking inventory of a client's perspective provides subjective clinical indicators. Clients know their bodies best, and ignoring clients' perceptions of their physiological alarms potentially omits key subjective indicators that could assist in treatment. Through reflective practice, a therapist can examine overlooked or invalidated client perceptions or sensations. These evaluations can improve rigor and authenticity in assessment, treatment planning, and practice.³² While the practitioner may possess enhanced experience and knowledge, and may notice client changes, caregivers' and clients' own abilities to identify changes should not be denied. Hence, consideration of all stakeholders as sources of information will enhance the cooperative experience and may improve care.³³ Reflective practice reinforces self-awareness and assessment skills that help a practitioner to cross-examine clinical interpretation and cross-check it against client and caregiver perceptions.

Regularly seeing a client may have positive effects, such as building rapport, while also negatively affecting the ability to observe objectively. The assumption that certain areas of client recovery are within normal limits can be dangerous to the client's future health. For example, intake and weekly assessments documented a baseline for the participant with adult hydrocephalus, but, after reflective practice, the first author realized that weekly assessments had become more mundane than informative or enriching. Moreover, it appeared that, as weeks proceeded and the client was progressing, the first author was missing important cues to client "backsliding," because he expected that the client was improving. Reflective practice aided the first author to uncover these problems and work toward correcting them. Through reflective practice, the first author identified that he had been overlooking important, potential indicators. Thankfully, the indicators turned out to be unremarkable, and the client's progress continued. Reflective practice allowed the authors to discuss concerns and improve their awareness, which ultimately improved their stewardship and shepherding of client sessions. In addition, the first author developed and honed clinical assessment skills.

Admittedly, there is a complex interplay between seeking Christ's will *and* respecting the free will

that God has given the client (for example, as in Revelation 3:20, where people are invited to "open the door" when Christ knocks). The current authors believe that seeking God's will in reflective practice and attending to a client's free will are both Christ-focused *and* person-centered, because they can involve prayer and thoughtful consideration of what might be God's will for a client while identifying that a client may or may not choose to follow advice (even if a professional has sought God's will and believes that the advice is in keeping with it). Just as in all of life, when another person chooses not to follow what the faith-led professional believes is God's will for her or him, it provides an opportunity for the practitioner's continued prayer and reflection (as indicated by such passages as Jonah 2 and 1 Thessalonians 5:17). In the illustrative case, the authors opened each session with the client by asking him and his spouse to describe their perceptions about how the past week had been and about their goals and desires for the future. This helped the authors to better understand the client and to have specific items/concerns about what to pray for at later reflective practice sessions.

Professional Growth

In clinical and research settings, reflective practice can be implemented in consultation with supervisors before, during, and after a professional-client relationship. These sessions provide opportunities for better preparation, and to receive feedback on not only one's actions, but also on one's emotions and cognitions during client interactions. Such guidance provides opportunities to develop bedside manner, rigor, and authenticity in caring for others. In addition, reflection and feedback should take into account well-known concepts such as counter-transference and transference that can pose threats to a therapeutic alliance in which an analyst emotionally reacts to a client or vice versa. Essentially, one individual in a relationship treats the other according to previous experience in other relationships.³⁴ Counter-transference is something a professional must autonomously manage. Reflective practice can assist the clinical researcher or clinician to expose parochial views which have developed before or during client interactions.

The first author's experience with reflective practice challenged his responses to the client, whose mem-

ory and ambulatory abilities were different each week. So, the second author challenged the first to recognize the client's perspective and more authentically evaluate him. To do so included moving into the client's viewpoint and engaging empathy. This practice encouraged the first author in self-discovery, in exploration of other people's pain and suffering, and in seeking God's will for his work with the client. This set of actions is not only Christ-like in nature but utilizes key spiritual themes to enable the "healing hands" that practitioners are called to be. For the first author, reflective practice increased humility, and humility improved engagement with the client. Ultimately, this led the first author to improve practice, which led to better outcomes for the client.

What Is the Foundation on Which the Foregoing Are Built?

The general application of scripture in clinical research and practice can be modeled after the dramatic change in the characterization of God from the Old Testament to the New Testament. The omnipotent God of the universe lost himself to step into life as a human. For example, in Luke 2, in the birth of Jesus Christ, God became a vulnerable infant who needed his parents to survive, and Jesus grew and developed under the tutelage of Mary and Joseph. Why would God voluntarily give up power? It was to bring humanity closer to him. As Christ is portrayed in Mark 10:45, God surrendered his omnipotence in order to show servitude and so that humans could see him as human and relate to him more completely.³⁵

Two key verses identify a clear priority for interpersonal interactions that represent Jesus's intent. First, 1 Corinthians 13:13 identifies love as the most important action beyond faith and hope. Love is earlier described as patient, kind, and humble. The passage directly connects to John 15:13 where self-sacrifice for friendship is identified as the pinnacle of love. Thus, if the most important transaction in the world is love, and sacrifice is the ultimate form of love, then that is the priority for Christ-followers. Scripture indicates love's importance and how to carry it out through the actions God calls us to, but "to give up a life" can be accomplished in ways other than dying for someone. Christ-like sacrifice is often regarded solely as sacrificial death for another, such as jumping in front of a bullet to protect someone. However,

the verb "sacrifice" can entail surrender of something important or valued, for the sake of others. Sacrifice includes being willing to surrender one's perspective for the viewpoint of another in order to help him or her.

Surrendering perspective, even if it is an educated one, is an act of meekness, something also highly valued in scripture. Matthew 11:29, Psalm 37:11, and Psalm 25:9 all proclaim the amazing quality of those who are meek. Even if one does not agree with another's worldview, it would be empathic, meek, and Christ-like to step into that perspective. To grasp such a process, one must comprehend that two perspectives can coexist at the same time. One does not have to accept another's perception as truth but can accept the existence and development of the other individual's perspective. Proverbs 17:27 depicts individuals of such understanding and knowledge as nonjudgmental and receptive through listening. This scripture passage can inform the use of Carl Rogers's work, including unconditional positive regard,³⁶ which provides a "safe space" for a client to explore what is and what might be.³⁷

As mentioned, restraining one's tendency to judge and forfeiting the desire for superiority is part of love. Jesus self-limited his godly perspective to experience the perspective of humanity. His sacrifice was like the unconditional positive regard that can be offered to clients; it does not deny the practitioner's expertise or reality, but it empowers a client to know and explore. This may lead to discoveries that move treatment forward as the client builds his or her understanding. However, as was mentioned above, this must include the practitioner's recognition that the client has a will of her or his own that can be exercised and which is God granted. And so, through reflective practice, the clinical researcher or clinician can exercise sacrifice and explore the beliefs, values, and goals of her or his client. The clinician should use both their own professional vantage and the client's perspective to inform their work.

The clinical researcher or practitioner can choose to sacrifice the powerful role in order to better help the client—with humility. In our illustrative case, sacrificing the position of power and seeking God's will led the first author to take the client's perspective and understand his worries and frustrations. On a day when the client miscalculated a math problem in

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the trail-making test, he focused on it and brought it up repeatedly. The first author reflected on this, and it led him to say, “You are right. You did get one of the math problems wrong, but you got many more of them correct. That’s why we are doing these exercises ... so that you can get more of them right every week” (paraphrased). The client looked surprised and responded that he saw the first author’s point. “Oh. Right. That *is* why we are doing this.”

Clinicians and clinical researchers are poised to show God’s love through the aforementioned sacrifices of power and perspective. Galatians 6:2 indicates that to completely fulfill God’s law people must “carry each other’s burdens.”³⁸ While this can apply to physical burdens, it also applies to the emotional, cognitive, and social burdens of life. Sharing perspectives can improve empathy and rapport with clients, leading them to place more trust in the therapeutic relationship.

Ethical Considerations in Faith Integration

At the majority of clinical sites in the United States, a psychologist or counselor is prohibited or discouraged from identifying personal spiritual or religious beliefs as this may cause transference, counter-transference, or disruption of the working alliance.³⁹ As such, the clinician or clinical researcher may need to refrain from disclosing details about her or his faith/religion. One can act on Jesus’s behalf without disclosing details about personal faith. One of the first author’s mentors once said, “Don’t force his name on them, but act in the way [of Christ] until they ask you why you behave differently, and that’s when you say his name.” When clients ask such questions, this opens a door for limited disclosure. More importantly, it gives them cause to reflect on the loving, therapeutic behaviors of practitioners who have faith. Among the behaviors that might lead a client to question the reason for a professional’s behavior is faith-infused unconditional positive regard. When one spends more time listening and validating than stating conclusions, and more effort giving empathetic affirmations than wielding social power, then clients wish to know why. Nevertheless, a clinician or clinical researcher must be abundantly cautious about personal disclosures – whether regarding faith or other.

Sometimes, it may be in the best interest of the client not to identify oneself as a Christian. Here, again, is the importance of sacrificing self and exploring a client’s perspective. Some clients may have negative views about terms like “Christian” or “religion” and to identify with them could compromise the client’s trust. For those clients, one can be truthful by displaying Christ in actions rather than in explicit discussion. This manner of introducing Christ into clinical work complies with American Psychological Association mandates while permitting a practitioner who is a believer to live in truth (for example, as in 2 John 1).

Overall, reflective practice allows clinical researchers and practitioners in psychology and related fields to engage in and explore experiences that they have had with clients while considering God’s will for their work. The ways in which a practitioner carries out the actions of his or her professional life provide opportunities to leave impressions of trust and care. The model of Christ is one that involves both washing individuals’ feet and dying for all of humanity (for example, John 13:1–17; Luke 23:26–43).⁴⁰ Thus, the example is one that is loving at “micro” and at “macro” levels. The call to be like Christ can be translated into caring behaviors at both levels: for example, offering to hold the door for a client as he or she exits the therapeutic environment; engaging in regular episodes of reflective practice with faith integration in order to seek God’s will for one’s decisions about a client’s care.

In keeping with Hearn’s assertion (mentioned above), science and practice must be subsidiary to the authority of Christ.⁴¹ As God directs those who need healing to those who are prepared to give it, so God should be invited to guide the therapeutic endeavor. To help one’s neighbor explore her or his experiences and move toward healing is part of “loving a neighbor as oneself” (Luke 10:25–37). Reflective practice may serve as an avenue for the practitioner to advance God’s will through human actions. This additional exercise may preserve the working alliance and promote positive treatment outcomes by preventing transference or counter-transference, and enhancing perspective-taking and unconditional positive regard. Reflective practice is a strategic tool for clinicians and clinical researchers to use in order to follow God’s second commandment. Ultimately,

by “loving our neighbors” we are also loving the Lord (Matthew 25:40–45).⁴²

Beyond Psychology and Counseling: Faith Integration with Reflective Practice in Other Fields

The illustrative case in the present article focused on clinical research and practice in psychology and related secular fields. However, as was noted in the introduction, the proposal of faith integration with reflective practice also has relevance to those in other fields such as health care, who can use similar techniques to those proposed here as they prepare for or reflect about sessions with patients, meetings with clients or colleagues, and/or hours of teaching students. Several fields incorporate reflective practice, including psychology, nursing, social work, pharmacology, and education.⁴³ Indeed, similar methods of reflective practice with faith integration can be used by just about any Christian professional in his or her interactions with other people—whether they are patients, clients, customers, research participants, or coworkers.

When the person of faith tempers the perspective of authority in order to better understand the views and wishes of others, it can be done in ways that seek God’s will and that recognize the free will of “the other.” Ultimately, this can lead the professional to further prayer and reflection regarding the circumstances and to move forward in wisdom (as noted in Proverbs 17:27). When one acts from wisdom, through Christ-seeking, then she or he can trust that God will guide—even when the situation seems dire (as in Jonah 2). Whether one is working in a lab alone with chemicals, in a veterinary clinic with patients and their owners, in a client-oriented field like psychology, or somewhere else, actively seeking God in everything and setting aside time to do so *deliberately* through reflective practice can be a key to infusing faith into one’s work. As George Washington Carver noted when asked about his scientific achievements, his morning walk in the garden alone with God was his way of seeking God’s will and guidance for his scientific work.⁴⁴ He stated, “Without God to draw aside the curtain, I would be helpless.”⁴⁵ Similarly, professionals across disciplines can endeavor to gain clarity and understanding through regular reflection that is integrated with an invitation for God to guide the way. ◀

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William Horst

From One Person? Exegetical Alternatives to a Monogenetic Reading of Acts 17:26

William Horst

Biblical scholars and theologians who defend the classical view that Adam and Eve are the sole progenitors of humanity typically appeal to Acts 17:26 as a key proof text. This verse is part of Paul's speech in Athens, and is usually translated to say something like, "from one ancestor [God] made every human nation to dwell upon the entire face of the earth"; in this instance ancestor is normally understood to be Adam. This article surveys several alternative exegetical analyses of the passage that do not suggest that humanity descended from one single couple, and compares the considerations that weigh in favor of and against each plausible option. Ultimately, it is argued that the Christian tradition of the unity of truth suggests that faithful interpreters of Acts may opt to favor those plausible interpretations that align with the scientific consensus of polygenism over those that imply monogenism.

Keywords: Adam, polygenism, monogenism, evolution, Acts, Athens, Stoicism, Galileo, Bellarmine, unity of truth

In his speech in Athens, Paul states that "from one [God] made every nation of humans to dwell on the whole face of the earth" (Acts 17:26).¹ Modern English translations of the Bible typically render the phrase "from one" (Greek: *ex henos*) to indicate that the "one" refers to one human. For example, the New Revised Standard Version translates the phrase as "from one ancestor," the English Standard Version has "from one man," and the Common English Bible reads "from one person."² The majority of commentators on the passage likewise understand the phrase to refer to Adam, the first ancestor of humanity,³ and Christian authors who argue against an evolutionary understanding of human origins usually cite this passage as decisive evidence that the Bible teaches that Adam and Eve are the first parents of all humanity.⁴

Evolutionary science challenges the claim that Adam and Eve are the sole parents of all humanity (i.e., monogenism) in that genetic analysis points to a population

bottleneck in *Homo sapiens* of about 10,000 individuals, about 100,000–200,000 years ago.⁵ In other words, our genetic diversity suggests that we have descended from a population of ancestors that was not less than several thousand individuals at any point since biologically modern humans have walked the earth. The evidence suggests that no single pair of humans ever gave rise to the rest of humanity; this does not cohere well with the conventional interpretation of Paul's claim that God made all human nations "from one" (Acts 17:26). This presents an interesting critical problem for those who wish to take both the scientific evidence and the scriptures seriously.

Although the standard interpretation of Acts 17:26 does seem to contradict

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the claim that the smallest bottleneck in human population involved thousands of individuals (i.e., polygenism)⁶ rather than two, the meaning of “from one” in this verse is not as clear as the mainstream translations and widespread view of commentators would suggest. Ambiguities in the language of the passage in question give rise to several different, plausible interpretations of the phrase in which Paul identifies that from which God made all the nations of humans. In other words, it is not clear that the passage refers to Adam at all, and thus the passage does not necessarily present a problem vis-à-vis polygenism.

In this article, I will survey several possible interpretations of what the phrase “from one” refers to in Acts 17:26. I will present the best arguments in favor of and against each interpretation, and I will ultimately suggest that it is not definitively clear on exegetical grounds which of the possible meanings is best. I will then briefly discuss the Christian tradition of the unity of truth, in order to suggest an approach to adjudicating between the potential interpretations in the face of scientific evidence for polygenism. In short, I suggest that it is reasonable to favor those plausible exegetical options that cohere with the scientific consensus over those that do not.

Paul’s Athenian Address

The reference to God’s making every human nation “from one” (Acts 17:26) falls within an address Paul delivers while in the ancient Greek city of Athens. In order to assess potential interpretations of this phrase, it is necessary to consider the account of Paul in Athens more broadly (17:16–32). There are numerous interesting interpretive matters that I will not be able to cover, but several specific issues will be relevant to my discussion below.

In a number of ways, Paul’s visit to Athens is atypical of his ministry as recorded in the book of Acts. First, Paul does not appear to have planned to visit Athens. Rather, believers from the city of Berea bring Paul to Athens to keep him safe after controversy erupts there in response to his ministry (see Acts 17:1–15). Paul waits in Athens for Timothy and Silas, his traveling companions, to join him, and while he is waiting there, he becomes distressed because the city is full of idols (17:15–16). It appears that Paul begins to minister in the synagogues and

the marketplace specifically in response to the distress that the idols cause him (17:17). In other words, Paul’s Athenian ministry is impromptu.

Paul’s visit to Athens is also unusual in that this is the only passage of Acts in which Paul is explicitly said to interact with philosophers. In particular, the text mentions philosophers from the Stoic and Epicurean schools (Acts 17:18), both of which originated in Athens several centuries earlier. Controversy about Paul’s ministry is usually sparked by objections among the Jewish community of a given city (Acts 13:44–45; 14:1–2; 17:5; 18:5–6, 12–13; 19:8–9; 21:27–28), or failing that, by Pauline actions that threaten to take a financial toll on certain influential people in a particular locale (Acts 16:19; 19:23–27); in Athens, however, the plot moves forward because of the philosophers’ reactions to Paul (Acts 17:18–19). Although the text does make passing mention of Paul engaging in discussions in the Jewish synagogue (Acts 17:17), Jewish concerns are not central to the narrative. Greek philosophy is front and center in the Athenian account in a way that is not found elsewhere in Acts.

The particularity of Paul’s ministry in Athens can also be seen in Paul’s speech to the Areopagus (Acts 17:22–31), which was the chief court of Athens. Most of the other speeches in Acts make heavy and explicit reference to the Jewish scriptures, typically in order to show that Jesus fulfills prophecies (Acts 2:14–36; 3:12–26; 4:8–12; 7:2–53; 13:16–41, 46–47; 15:13–21; cf. 26:22–23). By contrast, Paul’s address in Athens includes no explicit appeals to scripture, though arguably certain elements, such as God’s creation of the world (Acts 17:24), could be considered implicit allusions to elements of scripture. Paul does explicitly quote from the Athenians’ own poets instead: “as some of your own poets have also said, ‘For we also are [God’s] offspring’” (Acts 17:28).⁷ Paul’s choice of allusions in this speech reflects the non-Jewish, philosophical audience to whom he tailors his remarks. Whereas references to biblical prophecy would be compelling in a Jewish synagogue, they would be of little use in front of a council of Athenian intellectuals.

Paul is brought before the Areopagus because some of the Athenian philosophers understood him to be proclaiming “foreign divinities” (Acts 17:18). An educated ancient reader could not help but recall the

fifth century BCE Athenian philosopher Socrates, who was widely known to have been executed after standing trial before the Areopagus for introducing “new divinities.”⁸ So, although it may seem at first glance that the Areopagus is simply curious to know more about Paul’s new teaching,⁹ we can reasonably imagine that his “new teaching” about “foreign divinities” makes him suspect in the eyes of his audience (see esp. Acts 17:20).¹⁰

One of the major apparent aims of Paul’s address is to convince his audience that the God he proclaims is not actually foreign or new to Athens. A number of elements drive at this basic point. At the beginning of his speech, Paul mentions an altar “to an unknown god” which he found as he went through Athens, and states that he is about to proclaim to the Athenian council that which they worship without knowledge (Acts 17:23). The idea seems to be that the God Paul proclaims is not a foreign divinity that is new to Athens, but rather a God of whom the Athenians are already at some level aware, and whom they already worship implicitly. Likewise, Paul’s God is the creator of the whole world (Acts 17:24), and provides life, breath, and everything else to everyone (Acts 17:25). These claims would obviously include God’s creation of Athens, and providential sustenance of the people of Athens. Again, the God in question is not novel or foreign, but rather familiar and relevant. God is near to everyone (Acts 17:28), including the people of Athens, and apparently, they have already been feeling around for this God, as if blindfolded or searching in the dark (Acts 17:27). Paul’s allusion to the Athenian poets (see above) likewise establishes that the people of Athens already have some knowledge of the creator God, albeit an incomplete knowledge (Acts 17:30). All of these elements serve to establish that the God Paul proclaims was already at work among the Athenians before he arrived there, and although his proclamation has novel elements (see esp. Acts 17:31), it is in a certain kind of continuity with already-accepted Athenian thought about God.

Within the context of Paul’s refutation of the claims that his teaching is new and his God is foreign, the assertion that God made all human nations “from one” (Acts 17:26) serves to unify humanity under the providential care of the singular creator. Regardless of which interpretation one chooses for this phrase, the import of the claim is that the Athenians and

Paul share a common origin stemming from the same God.

Manuscript Ambiguity in Acts 17:26

The breadth of interpretive possibilities for the phrase “from one” is due in part to textual differences among ancient manuscripts of the passage. The text of the New Testament is based on thousands of ancient manuscripts—many of them fragmentary—the earliest of which date to the third century CE, or perhaps the end of the second century CE in a few cases. No two of these manuscripts match completely, since the process of transcribing a text by hand is prone to various kinds of error. *Textual criticism* is the discipline by which scholars compare differing manuscripts and attempt to reconstruct critically the earliest ascertainable version of a given passage.¹¹ Some manuscript differences can be resolved easily, such as when a scribe clearly made an obvious spelling mistake, or failed to copy an entire line of text. Other discrepancies are more difficult to resolve, and decisions are made with varying degrees of confidence.¹² In the case of Acts 17:26, the majority of ancient manuscripts read “from one blood” (Greek: *ex henos haimatos*), but the manuscripts generally considered to be the very most reliable read “from one” (*ex henos*).¹³

The committee responsible for producing the standard critical edition of the Greek text of the New Testament considered several potential arguments in favor of the “from one blood” variant of the text.¹⁴ First, because the Greek word here translated “blood” (i.e., *haimatos*) has a similar ending to the Greek word here translated “one” (i.e., *henos*), it is possible that the eye of a scribe may have skipped past the word for “blood” after writing the word for “one.” This kind of error is not uncommon in the transcription of biblical texts. Second, it is conceivable that someone deliberately deleted the word “blood” because Genesis describes God forming humanity from dust, not blood (Gen. 2:7). This sort of editing of the text did sometimes occur in the process of the dissemination of the Bible. Third, it is likewise possible that “blood” was removed from the text because “from one blood” may have sounded like an unnatural way to describe the descent of humanity from Adam. Any of these hypothetical scenarios is a possible explanation for how an earlier reading of “from one blood” might have given rise to some manuscripts that read

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“from one,” though it should be borne in mind that the second and third scenarios rely on the assumption that the scribes would have understood the phrase in question to refer to Adam, and I argue that this is less than clear.

Though words were occasionally left out of the text during the process of transcription, it was also quite common for extra words to be inserted into the text that were not original, and the majority of the committee ultimately found the attestation of “from one” in important early manuscripts compelling reason enough to conclude that “blood” was added to, rather than removed from, the text of Acts.¹⁵ Because most modern translations of the New Testament are based on the standard critical Greek text, they typically leave “blood” out of the English rendering of Acts 17:26.

Recently, Fred S. Cannon has argued that the “from one blood” textual variant should be taken seriously, based on significant early attestation of this reading in the manuscript tradition.¹⁶ For this reason, I will consider interpretive options that would follow from both the “from one” and the “from one blood” textual variants in this article.

Linguistic Ambiguity in Acts 17:26

In addition to the ambiguity introduced by differences between manuscripts, the meaning of “from one” is ambiguous in that the Greek word translated “one” (*henos*) could potentially be masculine or neuter in gender. Greek adjectives change spelling based on whether they are singular vs. plural, whether they are gendered masculine, feminine, or neuter, and how they function in relation to other words within the sentence (i.e., “case”). The Greek word translated “one” (*henos*) in Acts 17:26 is singular, and appears in the genitive case.¹⁷ The masculine singular genitive and neuter singular genitive forms of an ancient Greek adjective are spelled in exactly the same way. In most cases, context clarifies whether a given adjective should be understood as neuter or masculine, but occasionally, a genuine ambiguity occurs. If “blood” is considered to be part of the text of Acts 17:26 (see above), then “one” (*henos*) is clearly neuter, since the adjective modifies the neuter noun “blood” (*haimatos*). However, if “blood” is not considered to be part of the text, then nothing concrete remains to disambiguate whether “one” is

neuter or masculine, which expands the set of possible referents.

The majority of interpreters of Acts 17:26 understand “one” to mean “from one person” (i.e., Adam); this view would make the adjective masculine.¹⁸ By contrast, if the adjective is neuter, it would potentially express the idea “from one thing,” which some scholars take to mean something like “from one source.” Additionally, the text could be understood to express the following thought: “from one (nation) [God] made every nation of humans.” The word “nation” (Greek: *ethnos*) in this passage is a neuter noun, so if this is what the text expresses, the adjective “one” would be neuter, as well. In short, the Greek wording of Acts 17:26 potentially accommodates multiple interpretations of what it is from which all human nations originate. Other interpretations are certainly conceivable beyond the ones I have mentioned, but these seem to be the most plausible, and I will discuss reasons for and against each of these options.

Option 1: From One Human

A number of exegetical considerations weigh in favor of the majority interpretation, namely that “from one” means “from one human,” that is, Adam. A reference to “one human” establishes a tidy parallelism with “of humans” (Greek: *anthrōpōn*) later in the verse: “from one *human* [God] made every nation of *humans*.” Further, an appeal to the descent of all humanity from Adam would serve Paul’s rhetorical purposes in this passage, since the common lineage of all humanity does serve to unify the various human nations and potentially to challenge the xenophobia that can be found in the Athenians’ reaction to Paul’s “foreign divinities.” Paul was certainly familiar with the biblical account of Adam and Eve; this is apparent both because they were notable figures within the Judaism of Paul’s era, and because Paul appeals explicitly to Adam and/or Eve in a number of his letters.¹⁹ Further, in his letter to the Romans, Paul repeatedly refers to Adam as “one” (i.e., one person) using the same word found in Acts 17:26 (*hen[os]*; Acts 5:15, 16, 17, 18, 19; cf. 5:12). So, it would not be surprising to hear Paul refer to Adam as “one” in a speech. Given that virtually all critical scholars acknowledge that Luke and Acts were written by the same author,²⁰ it is relevant that Luke includes a genealogy of Jesus that continues back to Adam (Luke 3:23–38; cf. 1 Chron. 1:1), and

so an attentive reader of Luke/Acts could in some sense be primed to imagine the creation of humanity “from one person” as a reference to the descent of numerous generations of humans from Adam, despite the fact that Paul does not use Adam’s name in his speech.²¹

The notion that “from one” refers to Adam is further supported by several other elements in the surrounding verses that can potentially be understood to evoke the early chapters of Genesis. Just before the comment about God’s creation of all nations of humanity “from one” (Acts 17:26), Paul describes God’s creation of heaven and earth: “The God who made the world and all the things in it, who is Lord of heaven and earth, does not dwell in temples made by hand” (Acts 17:24). He likewise states that God “gives to everyone life and breath and all things” (Acts 17:25); the passage is potentially reminiscent of God’s breathing the breath of life into Adam, as described in Genesis 2:7. The wording of these comments more closely resembles a passage from Isaiah, which describes God as creator and giver of life: “Thus says the Lord, the God who made the heaven and established it, who made firm the earth and the things in it, and gives breath to the people who are on it, and spirit to those who walk it” (Isa. 42:5).²² Nonetheless, at a thematic level, biblically informed readers could easily find themselves thinking of the account of creation in Genesis when they hear Paul’s address to the Areopagus, since it describes God’s creation of heaven and earth (Gen. 2:4; cf. 1:1–2:3), and the bestowal of divine breath (Gen. 2:7). Further, just after his reference to God’s making of the nations “from one,” Paul says that God created the nations “to dwell upon the whole face of the earth” (Acts 17:26). The phrase, “upon the face of the earth” occurs regularly in the early chapters of Genesis (2:6; 6:7; 7:4, 23; 8:8, 9, 13), including a number of specific references to the spread of groups of humans over the face of the earth (Gen. 11:4, 8, 9). These textual connections, or “intertexts,” add to the likelihood that Paul intends a reference to Adam when he refers to God’s creation “from one,” since they suggest that Paul has creation, human origins, and the like, in mind at this point in his address.

So then, a substantial case can be made in favor of the Adamic reading of “from one” in Acts 17:26, and this helps to explain why so many interpreters understand the phrase as a reference to Adam. However,

this position is weakened by the fact that if “from one” is meant to refer to Adam, Paul’s non-Jewish Athenian audience would not reasonably have understood him to intend this allusion, since they would not be familiar with the Jewish scriptures, and thus would not share Paul’s assumption that Adam and Eve were the progenitors of humanity. A Jewish or Christian reader of Acts could potentially understand “from one” in reference to Adam, but given that Paul’s speech otherwise appears to be aimed at presenting his intellectual Athenian audience with an intelligible message (see above), it would be surprising if he is found to base his rhetoric on an appeal to scripture that his audience would not be able to recognize.

It is worth noting that a typical Greek understanding of human origins did not include the notion of a common ancestor that united all of humanity. Greek literary tradition does include genealogical accounts of various people-groups descending from earlier progenitors and migrating to various regions,²³ but such traditions did not paint a picture of the formation of all peoples from a single primordial nation, let alone a single common progenitor. Rather, the development of the human race includes the descent of some bloodlines from initial progenitors who were conceived directly from deities, other nations that were said to be “autochthonous” (Greek: *autochthōn*), meaning that they sprang directly from the soil of their particular region,²⁴ and other cases of extraordinary origins for particular groups of people. For that matter, different sources reflect multiple inconsistent traditions that the Greeks maintained without feeling the need to harmonize them into a consistent account. Some traditions identify Phoroneus as the first man,²⁵ but genealogical literature often begins with Deucalion—the son of the Titan god Prometheus—who survived a great flood together with his wife Pyrrha.²⁶ After the flood, at the behest of Zeus, Deucalion and Pyrrha throw stones over their heads which turn into humans; this unusual event gives rise to a particular people group.²⁷ Yet, Deucalion and Pyrrha also gave rise to progeny by more conventional procreation, and the relationship between this line and the people created from rocks is never explained.²⁸ Pseudo-Apollodorus’s account of Deucalion and Pyrrha’s progeny also includes additional people who were conceived by deities.²⁹ The point is, Greek genealogical tradition presents

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a hodgepodge of different people and groups originating from multiple sources, and could not readily be summarized in terms of all human nations originating from a single primordial nation or people. As John van Seters puts it, “The Greek tradition of origins ... seems to focus more on the origins of particular states, tribes, and peoples than on humankind in general.”³⁰

For the purposes of Paul’s address to the Athenians, it is particularly relevant that the founding mythology of Athens maintained that the Athenians were *autochthonous*. In other words, their forebears did not migrate to a certain region and there found a city. Rather, they literally sprang from the soil of Athens. This gave the Athenians a particularly strong claim to their land, grounds for civic pride, and, in some cases, a sense of superiority over ethnically mixed groups whose ancestral heterogeneity was understood to produce social inequity and a lack of loyalty to their city. The people of Athens understood themselves as pure descendants from a common set of ancestors who were particular to them.³¹ This is quite a different picture from the formation of all human nations “from one” (Acts 17:26), which Paul includes in his address to the Athenian council.

It is certainly possible that Paul could claim that all human nations descended from one ancestor, and that the Athenians could understand this concept, even though they would not have understood the “one” in question as Adam, in particular. However, this would presumably not have been rhetorically compelling to a people who did not hold to Genesis as an authoritative text, and did not think of human origins in terms of a single family tree. If Paul does intend to refer to God’s beginning human creation with a single progenitor, this claim would serve as a challenge to the Athenians’ traditional self-understanding.

Option 2: From One Nation

Although the Adamic interpretation of “from one” (Acts 17:26) is certainly the most popular, a relatively good case can be made for understanding the phrase to mean “from one nation.”³² First, this sense of “one” would establish parallelism with “nation” later in the verse: “from one *nation* [God] made every *nation* of humans.” Given that the occasion for Paul’s speech has to do with the perceived *foreign* nature of

his teaching in an Athenian context, and given the abundance of ethnic and cultural attributions in the passage in general,³³ a discussion of nations seems slightly more relevant than a discussion of a single human progenitor.³⁴

In the biblical tradition, God’s formation of all the nations of the earth from one nation would correspond to the Babel incident of Genesis 11:1–9. This passage describes unified humans resisting being scattered across the face of the earth (Gen. 11:4). Instead of dispersing across the earth, humans settle in the land of Shinar and work together to build a fortified city with a tall tower, in order to make a name for themselves and avoid the vulnerability of being spread across the earth. The Lord confuses the language of the people so that they cannot continue to undertake further endeavors of this nature, and thus, the people are scattered across the face of the earth despite their efforts to avoid this. Apparently, the spread of humans across the face of the earth was God’s intention from the beginning, which is consistent with God’s instruction earlier in Genesis for humans to “be fruitful and multiply, fill the earth and subdue it, and rule over the fish of the sea and over the flying creatures of the sky, and over every living thing that creeps over the earth” (Gen. 1:28). The language of the passage is ambiguous as to whether it describes a universal human unity and scattering or a local unity and scattering,³⁵ but the Babel story certainly could be understood as the origin of the diversity of human nations, especially by ancient readers who would not have had anthropological evidence to challenge such an account of human origins.

A number of specific parallels between Paul’s address to the Areopagus and the biblical account of Babel support the notion that Paul could have Babel in mind when he describes God making all human nations from “one” (Acts 17:26). Indeed, a number of scholars note the parallels between the passages, even if they understand Adam to be the “one.”³⁶ Although the language of “nation” per se does not occur in the passage, this notion is basically implied by the comment that “the people are one, and they have one language among them” (Gen. 11:6). Likewise, the verse just before the Babel passage describes the “nations” spreading over the earth from the descendants of Noah (Gen. 10:32), so the reader of Genesis is certainly primed to find the same

concept of nations in the unification and scattering of the people in the Babel account (Gen. 11:1-9). So, when Paul describes God making all human nations “from one,” it is quite plausible that he has in mind one *nation*, and that the nation in question is the unified people who gathered together in the land of Shinar before being scattered by divine intervention.

The plausibility of a Pauline reference to Babel is further supported by his description of human nations being made “to dwell on the whole face of the earth” (Acts 17:26). Although the language of “the face of the earth” occurs in a number of instances in the early chapters of Genesis (2:6; 6:7; 7:4, 23; 8:8, 9, 13), the instances that refer to *peoples* being spread across the face of the earth all occur within the Babel account (Gen. 11:4, 8, 9; cf. 10:32). Thus, Paul’s reference to nations dwelling on the face of the earth is less a parallel to the early chapters of Genesis in general, as some scholars suggest (see above), and more a parallel to the Babel incident, in particular.³⁷

The major difficulty with the proposal that “from one” refers to the single nation gathered at Babel, from whom God produced all human nations, is essentially the same as the key difficulty with the Adamic interpretation (see above). If Paul does intend to refer to the Babel account and the subsequent diversification of ethnic groups, this is not a reference that his audience would be able to pick up on. As with the Adamic interpretation, it is certainly possible that Paul’s hearers could have grasped the notion that all human nations descended from one common primordial nation, but this would not have been a matter of common ground between Paul and the Athenians. Rather, the point would be a challenge to their cherished self-understanding.

Option 3: From One (Source)

One point of contention within scholarly interpretation of Paul’s speech in Athens is whether the character of the speech is more biblical or more consistent with Greek philosophical tradition.³⁸ A biblical background is certainly more consistent with Paul’s speeches in Acts in general, but biblical allusions would not be intelligible to Paul’s Athenian audience. A philosophically oriented speech would be congenial to the Athenian audience, especially the Stoic and Epicurean philosophers mentioned in the text (Acts 17:18). Consistent with a philosophically

focused interpretation of the speech, certain scholars have suggested that the phrase “from one” (*ex henos*, Acts 17:26) should be understood as a grammatically neuter construction (“from one [thing]”), implying “from one (source),” and that the reference should be understood in terms of Stoic philosophical convictions about the unity of humanity and the origination of all humanity from the divine.³⁹ Thus, Paul does not explicitly affirm here that God made all humanity from Adam—one ancestor—but instead affirms that humanity is unified in that all human nations share a common source—namely, the creator God.

Although both Stoic and Epicurean philosophers are mentioned in the account of Paul’s ministry in Athens (Acts 17:18), his speech has much more overlap with Stoic thought than with Epicurean thought. Epicureans denied the idea of divine providence, and taught that the gods were not interested in the lives of humans. By contrast, the Stoics were basically pantheistic and emphasized the nearness and providence of the divine.⁴⁰ Paul’s address in Athens likewise emphasizes God’s nearness and involvement in human lives (esp. Acts 17:27-28), so a typical Stoic would find much more to agree with than a typical Epicurean.⁴¹ Paul’s speech certainly differs from Stoic thought on many points, especially his proclamation of the resurrection of Christ and the coming day of judgment (Acts 17:31), but he is clearly shown in this passage to be presenting his gospel in a manner that overlaps as much as it could with a Greek philosophical perspective, especially a Stoic perspective. For this reason, it should not surprise us to find that the phrase “from one” also has resonance with the Stoic tradition.

The Stoic notion of human unity due to a common source is rooted in Stoic cosmology. Although views differ significantly from author to author, Stoic cosmology generally understands the universe to be unified by an all-pervading spirit, which gives order and organization and ensures a deterministic chain of fate.⁴² The divine is everywhere providentially present. Thus, God or the gods can be said to be the source of everything in the universe, including all people. Some Stoic writings appeal to the divine source of humanity in order to encourage equality and regard for others. For example, Seneca the Younger, a first-century CE thinker shaped by Stoicism, appeals to the common source of humanity in order to encourage people to treat their slaves

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ethically: “Kindly remember that he whom you call your slave sprang from the same stock [literally ‘from the same seeds’].”⁴³ Stoics often regarded all of existence as a unified, interconnected body or society based on the pervasive presence of the divine spirit.⁴⁴ Widespread human awareness of the divine is also explained by the origination of humanity from God. Cicero says, “Man recognizes God because, in a way, he remembers and recognizes the source from which he sprang.”⁴⁵ If Paul does intend to convey that God created every human nation “from one (source)” (Acts 17:26), this comment would be quite at home within Stoic discourse about divinity.

A number of other points of contact can be found between typical ancient Stoic teaching and Paul’s speech to the Athenians, which further strengthen the plausibility that “from one” may well also reflect Stoic ideas. First, a number of authors associated with the Stoic tradition refer to God as the ancestor of humanity,⁴⁶ much as Paul claims by quoting Aratus (Acts 17:28; see above). Indeed, Aratus’s writings betray that he himself was informed by Stoic thought to a significant extent.⁴⁷ Of course, the idea that all humans are God’s offspring is consistent with God being the “one” source from which all humans have sprung (Acts 17:26).⁴⁸ Another important Stoic concept is the idea that humans of various groups share an innate awareness of God,⁴⁹ and this constitutes a second point of congeniality with Paul’s speech, especially his appeal to the altar to an unknown god (Acts 17:23). Third, much as Paul appeals to the common source of humanity in order to challenge the potential Athenian objection to that which is foreign (see above), Stoicism often includes a conviction about the unity and equality of humanity.⁵⁰ These additional parallels between Paul’s address and typical Stoic discourse about the relationship between divinity and humanity increase the likelihood that the phrase “from one” (Acts 17:26) ought to be understood in reference to the common divine source of humanity.⁵¹

Another important element of Paul’s Athenian address is his opposition to idols. Although he does appeal to the altar to an unknown god to help make his case (Acts 17:23), he repeatedly insists that idols, altars, and other elements of pagan devotion are unsuitable ways to honor the divine creator (see Acts 17:24–25, 29; cf. 17:16). This aspect of the speech is not distinctly Stoic, but similar anti-idol polemic

can certainly be found within Stoic tradition.⁵² In fact, Paul’s opposition to idols is something that Jewish, Stoic, and Epicurean audiences would be able to agree on fairly easily.⁵³

In sum, a solid historical-cultural case can be made in favor of reading “from one” in Acts 17:26 as a reference to God as the universal divine source of every human nation, rather than an evocation of the account of human origins found in Genesis. Although such an interpretation understands the phrase to be rooted in Hellenistic and especially Stoic philosophical tradition, this does not imply that Paul holds a thoroughly Stoic view, nor would it necessarily mean that Paul is implicitly denying that all humans descended from Adam. It would simply mean that Paul is describing his gospel in a manner that is as accessible as it can be to his audience while still challenging a number of their assumptions (Acts 17:32–33).

It is not absolutely necessary to choose between an Adamic and a Stoic interpretation of “from one” (Acts 17:26). Several scholars posit that the author of Acts intentionally includes an ambiguous phrase, so that the biblically informed reader (or hearer) understands that Adam is intended, whereas the Athenian audience would have been expected to understand the phrase in terms of the more familiar Stoic concepts just discussed.⁵⁴ In other words, the reader of Acts is to understand that Paul is employing words that would sound like popular philosophical concepts to his Athenian audience, while the biblically informed audience of Acts knows the true meaning behind his carefully selected words. This is certainly within the realm of possibility, but it seems to assume exceptionally attentive and insightful readers. If the author of Acts does intend such a clever double entendre, it is difficult to imagine that very many people would pick up on it, especially since most would have heard the text recited aloud, rather than reading it off a page themselves. At the very least, a significant possibility exists that Paul refers to God as the source of humanity *rather than* to Adam as a common progenitor of all humanity, even if this is not the only possible interpretation.⁵⁵

Option 4: From One Blood (Collective)
Considering the “blood” textual variant (see above), the creation of all human nations “from one blood”

could be interpreted collectively, as Cannon does.⁵⁶ Such language could certainly be taken to indicate an idea similar to the “from one nation” reading that I discuss above (i.e., option 2), namely, that all human nations emerged from one common group, in contrast to the common Greek understanding that certain communities of people (e.g., the people of Athens) had distinct, exclusive origins that rendered them superior to the people of other states (see above).⁵⁷ The advantages and disadvantages of this view would be roughly the same as the “from one nation” interpretation.

Option 5: From One Blood (Adam)

The reading “from one blood” does not necessarily imply a collective interpretation of human descent. It could just as readily be understood in reference to the singular bloodline of Adam and Eve, the common human progenitors.⁵⁸ However, it would render an allusion to Adam still more implicit than the “from one (person)” interpretation because one would have to understand that humanity’s common bloodline has its roots in the creation of Adam and Eve. In other words, to an uninitiated audience like the Areopagus, it would not be apparent that Paul was referring to an individual couple at the head of humanity, especially since Greek culture narrated the development of humanity in a much more piecemeal manner (see above). Still, if one thinks less in terms of Paul’s Athenian audience and more in terms of Luke’s biblically informed audience, one could reasonably imagine that the reader of Luke is intended to understand that Paul has the bloodline of Adam and Eve in mind, but refers to the primordial couple implicitly since the Athenians would not understand the reference anyway. So, this fifth option can be added to the list of plausible interpretations.

Normative Interpretation of Acts 17:26

Multiple understandings of Paul’s reference to God’s making the nations “from one” (Acts 17:26) are reasonable on exegetical grounds. However, for the purposes of normative Christian interpretation, the options are not equally congenial to evolutionary science, especially scientific evidence in favor of polygenism. Interpretations involving the descent of all humans from one common ancestor (i.e., options 1 and 5) do not square well with polygenism.⁵⁹

Interpretations involving the descent of all humans from one nation or people group (i.e., options 2 and 4) square relatively well with polygenism, insofar as a polygenetic understanding of human evolution would involve descent from a relatively small population of ancestors in the remote past, though in the case of the “from one nation” option (i.e., option 2), we would perhaps need to treat the term “nation” loosely, as an interbreeding population does not imply an organized society. Indeed, the human ancestral population likely lived in small, scattered groups among which individuals migrated from time to time.⁶⁰ There are other critical difficulties involved with a literal interpretation of the Babel narrative of Genesis,⁶¹ but Paul’s explicit claim that humans descended from a single interbreeding population rather than certain groups having independent origins (as in the *autochthonous* origin of the Athenians) would be consistent with contemporary scientific consensus. The interpretation that humans were made from one (divine) source (i.e., option 3) works quite well vis-à-vis a Christian faith informed by polygenism, though of course we should be careful not to interpret Paul in an overly Stoic way that ignores his uniqueness as a proclaimer of the gospel of Christ. This third interpretive option has the added benefit that it would constitute a compelling basis for the sort of universality for which Paul argues not only to his Athenian audience (or at least the Stoics present in it) and to the earliest readers of Acts, but also to modern Christian readers. Although Stoicism is no longer a popular philosophical school of thought, the notion that humans should be unified because they all have their origin in one God is certainly sensible to many modern people.

Acts 17:26 and the Unity of Truth

Given that Acts 17:26 presents scholars with legitimate textual and exegetical ambiguities that allow for multiple plausible interpretations, how might modern Christians adjudicate between these possibilities, especially since some possible interpretations are more or less problematic vis-à-vis genetic science? The Christian tradition does not present us with an obvious, definitive answer to how such issues ought to be resolved, but insofar as a relevant thread of tradition can be found, potential conflicts between science (or natural philosophy, as the predecessor to modern science) and the Bible have been addressed in the West using the theological conviction of the

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unity of truth. In other words, nature and scripture are held to be God's "two books," both of which reveal God's truth in unique ways, but which, properly understood, cannot contradict one another, since both come from the one supreme God. As Kenneth J. Howell has shown, the strategies that have been adopted for reconciling God's two books vary greatly across situations, but the varied strategies are rooted in the shared core conviction that the natural world and faith can and should be reconciled in the rare case where they are found to conflict.⁶² For example, in the case of the Copernican revolution, both Galileo Galilei and his key interlocutors agreed on the unity of truth, and agreed that if the heliocentric model were proven indubitably, then biblical interpretation would need to be updated to correspond to nature. They disagreed primarily on the extent to which the heliocentric model was demonstrable.⁶³

More specifically, Richard J. Blackwell shows that both Galileo and Cardinal Robert Bellarmine—who confronted Galileo on behalf of the Roman Catholic Church regarding heliocentrism—seem to have presumed that scientific propositions that appear to conflict with scripture could be placed into one of three meaningful categories:

- Category I:* propositions demonstrated to be true;
- Category II:* propositions not demonstrated to date but which could be demonstrated in the future;
- Category III:* propositions which can never be conclusively proven to be true.⁶⁴

Both Galileo and Bellarmine agreed that issues in category I necessitate a reinterpretation of scripture, or at least an acknowledgement of ignorance in how to interpret problematic passages correctly. If a claim about the natural world is indubitably true, biblical interpretation must bend to accommodate this truth. Both apparently also agreed that issues in category III should not prompt a reinterpretation of scripture or Christian faith. Rather, our understanding of nature should bend to accommodate the Bible. Galileo's discussion of issues in category II is not always clearly consistent, but he generally argues that the meaning of the Bible should not be fixed in the face of issues in category II. Further, he apparently regarded heliocentrism as an issue in category II (i.e., provable, but not yet definitively proven in his day), and history has of course vindicated this view. By contrast, it seems that Bellarmine may have placed heliocentrism in category III (i.e., not ever provable), and thus

insisted that the Bible should trump natural philosophy on the matter.⁶⁵

As a biblical scholar with no serious training in biology, I am not in a position to determine the degree of certainty with which we can now affirm polygenism in human evolution, though what I have heard and read gives the impression that such a model should be affirmed with high confidence. For that matter, written records pertaining to Galileo and Bellarmine do not go very far toward establishing specific criteria for determining how to categorize a particular scientific claim in terms of certainty. Moreover, it is not a given that Galileo, Bellarmine, or any other individual in the history of interpretation should get to decide how modern Christians ought to adjudicate between scripture and science, not least because, as Blackwell notes, biblical truth was generally regarded as superior to scientific truth in the cultural milieu of Galileo and Bellarmine, whereas scientific truth is typically regarded as superior to biblical truth in much of modern Western culture.⁶⁶ Furthermore, as I argued above, it would not be correct to say that polygenism *contradicts* Acts 17:26, since Paul's comment about the origin of human nations can reasonably be interpreted in multiple ways. To say the least, the question of how to interpret this passage in the face of genetic science is less than straightforward, and past discussions at the intersection of science and scripture do not perfectly correspond to it. At best, my suggestions along these lines are provisional and invite further constructive discourse.

Given all of the above, I submit that the following three elements should characterize a faithful and scientifically informed approach to Acts 17:26:

1. The subject should be confronted and discussed. Scholarship opposing evolution on biblical and theological grounds routinely cites Acts 17:26 as a proof text against polygenism (see citations above), but many scholarly works written in favor of evolutionary creationism ignore the verse entirely.⁶⁷ My discussion in this article should deprecate any scandal associated with this passage for evolutionary creationists, since the passage does not necessarily demand a monogenetic understanding of human origins.
2. The range of plausible interpretations should be acknowledged. In all likelihood, most readers of

Acts in English assume that the text must refer to human descent from Adam, given the consistency with which modern English translations say something like “from one ancestor.” To raise awareness about this interpretive issue is to give more people the chance to have insightful thoughts about it, and this is presumably advantageous for all.

3. To the extent that polygenism is affirmed with confidence, plausible interpretations consistent with polygenism should be favored with corresponding conviction over those that imply monogenism.⁶⁸ This is not to say that science should dictate all aspects of biblical interpretation. Such an approach makes scripture subordinate to nature. The case of Acts 17:26 is particular in that multiple reasonable interpretations can be found, some of which cohere with scientific consensus and others which are problematized by science. This hermeneutical approach may potentially apply to other current or future points of tension between science and biblical interpretation, but it does not necessarily apply to all such points of tension.

We might say that both science (as the interpretation of nature) and exegesis (as the interpretation of scripture) involve degrees of confidence. In Galileo’s day, heliocentrism had not yet been demonstrated definitively, though there were good observational reasons for natural philosophers to think it was true. In the twenty-first century, scarcely anyone would question that the earth revolves around the sun. Galileo’s discussion of biblical interpretation involved a certain tentativeness, since he expected heliocentrism would be proven in the future (relative to his day). His argument was not that biblical interpretation should be revised based on what he thought would be proven eventually, but rather that the church’s interpretation should not be fixed on geocentric assumptions while the issue was unresolved. Analogously, biblical interpretation could also be said to involve degrees of confidence. Some elements of scripture are clear and pervasively agreed upon, whereas certain passages are exegetically controversial and cause a great deal of ink to be spilled in the course of scholarly interlocution. Furthermore, we could reasonably say that neither science nor exegesis are ever finished. The possibility always exists that a new scientific discovery will require revision of an entrenched consensus, and likewise, on occasion, a particularly

striking exegetical argument causes a shift in biblical interpretation.⁶⁹

We could consider a general principle that a strongly evidenced scientific consensus should take a certain kind of hermeneutical priority over a biblical passage with multiple plausible interpretations (if one or more interpretations fit the scientific consensus and one or more others do not), whereas a strongly held consensus about biblical interpretation should be maintained in the face of less-than-definitive scientific controversies. In some circumstances, definitive interpretation may need to be deferred until greater exegetical or scientific clarity can be reached. Such a principle seems to me a fair application of the concept of the unity of truth.

In the case of Acts 17:26, I have argued that multiple exegetically plausible interpretations are available, which cohere with polygenism to varying extents. Insofar as polygenism is deemed to be strongly evidenced, it can reasonably prompt faithful Christian interpreters of Acts to prefer exegetical options that accommodate this scientific conviction. It is possible that a new, brilliant exegete could come along with an insight that will settle the interpretation of this biblical passage in such a way that polygenism (or some other scientific claim) cannot reasonably be accepted by faithful Christians, though admittedly this sort of consensus among biblical interpreters is rare.

Navigating the interpretation of God’s two books in the sort of way I here propose has obvious potential pitfalls. Some scientifically minded people will want to prioritize scientific claims over exegesis to an undue extent, especially in cases where their own scientific contribution sits uncomfortably alongside biblical interpretation. Likewise, exegetes may tend to prioritize their understanding of a given biblical passage over scientific claims to an inappropriate extent, especially if their own research has yielded an interpretation that shapes their view. To avoid these extremes will require humility, patience, and a willingness for thinkers of various disciplines to listen to one another and assess their own convictions critically and carefully. ◀

Notes

¹All translations of ancient texts are my own unless otherwise noted.

Article

From One Person? Exegetical Alternatives to a Monogenetic Reading of Acts 17:26

²Additional examples in English include the New International Version, the New Living Translation, and the New English Translation, among others. This “personal” translation of this phrase is not limited to English (e.g., *Traduction œcuménique de la Bible*), though it does seem to be especially common among twentieth-century English versions. Some translations that tend toward more literal translation (often called “formal equivalence”) leave the phrase as “from one” (e.g., the New American Standard Bible), and some reflect the major manuscript variant, “from one blood” (e.g., the New King James Version), which I discuss below.

³For example, Bertil Gärtner, *The Areopagus Speech and Natural Revelation* (Uppsala, Sweden: Almqvist & Wiksells, 1955), 151–52; Hans Conzelmann, *Acts of the Apostles: A Commentary on the Acts of the Apostles* (Philadelphia, PA: Fortress, 1987), 142; F. F. Bruce, *The Acts of the Apostles: Greek Text with Introduction and Commentary*, 3rd ed. (Grand Rapids, MI: Eerdmans, 1990), 383; John B. Polhill, *Acts* (Nashville, TN: Broadman, 1992), 348; Luke Timothy Johnson, *The Acts of the Apostles* (Collegeville, MN: Liturgical, 1992), 315; C. K. Barrett, *A Critical and Exegetical Commentary on the Acts of the Apostles*, 2 vols. (Edinburgh, UK: T&T Clark, 1994–1998), 2:842; Joseph A. Fitzmyer, *The Acts of the Apostles* (New York: Doubleday, 1998), 526; Ben Witherington III, *The Acts of the Apostles: A Socio-Rhetorical Commentary* (Grand Rapids, MI: Eerdmans, 1998), 512; Darrell L. Bock, *Acts* (Grand Rapids, MI: Baker Academic, 2007), 566; David Peterson, *The Acts of the Apostles* (Grand Rapids, MI: Eerdmans, 2009), 496–97; Craig S. Keener, *Acts: An Exegetical Commentary*, 4 vols. (Grand Rapids, MI: Baker Academic, 2012–2015), 3:2647.

⁴For example, Dyson Hague, “The Doctrinal Value of the First Chapters of Genesis,” in *The Fundamentals: A Testimony to the Truth*, 4 vols. (Los Angeles: The Bible Institute of Los Angeles, 1917), 1:282–83; William D. Barrick, “A Historical Adam: Young-Earth Creation View,” in *Four Views on the Historical Adam*, ed. Matthew Barrett and Ardel B. Caneday (Grand Rapids, MI: Zondervan, 2013), 219; Philip G. Ryken, “We Cannot Understand the World or Our Faith without a Real, Historical Adam,” in *Four Views on the Historical Adam*, ed. Barrett and Caneday, 276–77; Kenneth D. Keathley and Mark F. Rooker, *40 Questions about Creation and Evolution* (Grand Rapids, MI: Kregel Academic, 2014): 238–39; William Vandoodewaard, *The Quest for the Historical Adam: Genesis, Hermeneutics, and Human Origins* (Grand Rapids, MI: Reformation Heritage, 2015), 308; Richard B. Gaffin Jr., *No Adam, No Gospel: Adam and the History of Redemption* (Philadelphia, PA: Westminster Seminary Press, 2015), 11; and Guy Prentiss Waters, “Theistic Evolution Is Incompatible with the Teachings of the New Testament,” in *Theistic Evolution: A Scientific, Philosophical, and Theological Critique*, ed. J. P. Moreland et al. (Wheaton, IL: Crossway, 2017), 885.

⁵For accessible discussion of the scientific bases for this claim and the implications for Christian theology, see Dennis R. Venema, “Genesis and the Genome: Genomics Evidence for Human-Ape Common Ancestry and Ancestral Hominid Population Sizes,” *Perspectives on Science and Christian Faith* 62, no. 3 (2010): 166–78, <https://www.asa3.org/ASA/PSCF/2010/PSCF9-10Venema.pdf>; Dennis R. Venema and Scot McKnight, *Adam and the Genome: Reading Scripture after Genetic Science* (Grand Rapids, MI: Brazos, 2017), and recently Loren Haarsma,

When Did Sin Begin? Human Evolution and the Doctrine of Original Sin (Grand Rapids, MI: Baker Academic, 2021), 77–82. Venema explains that although genetic evidence does point to a single common female ancestor about 170,000 years ago (i.e., “Mitochondrial Eve”), from whom all modern humans inherit their mitochondrial DNA, and a single common male ancestor about 50,000 years ago (i.e., “Y-Chromosomal Adam”), from whom all modern male humans inherit their Y-chromosome sequences, these ancestors would each have been part of much larger populations who also contribute chromosomes to the population of modern humans (pp. 175–76).

⁶C. John Collins notes that “polygenism” or “polygenesis” occurs in academic literature with multiple senses, and can refer to the idea that humanity developed in parallel in multiple regions at once (“Adam and Eve as Historical People, and Why It Matters,” *Perspectives on Science and Christian Faith* 62, no. 3 [2010]: 160), <https://www.asa3.org/ASA/PSCF/2010/PSCF9-10Collins.pdf>. I intend by this term only that modern humans have descended from a population of ancestors larger than a single couple.

⁷Paul apparently quotes directly from Aratus’s *Phaenomena*, a popular third-century BCE work that was translated into multiple languages, and was widely known in the time of Paul. The opening of the text, from which Paul quotes (Greek: *tou gar kai genos eimen*), is addressed to Zeus. Aratus may have made this particular comment with a similar statement in mind from the Stoic Cleanthes’ famous *Hymn to Zeus* (“for from you we are offspring”; Greek: *ek sou gar genos esmen*), which could be why Paul attributes this comment to Athenian “poets” (plural). C. Kavin Rowe, *World Upside Down: Reading Acts in the Graeco-Roman Age* (Oxford, UK: Oxford University Press, 2009), 37–38.

⁸See Xenophon, *Memorabilia* 1.1.1; Plato, *Apology* 24B; *Euthyphro* 3B; cf. Dio Chrysostom, *Orations* 43.9; Valerius Maximus, *Memorable Doings and Sayings* 1.1, ext. 7; and Josephus, *Against Apion* 2.263–64. This parallel between Paul and Socrates is typically identified in scholarly analyses of the passage. E.g., Rowe, *World Upside Down*, 32; and J. Andrew Cowan, “Paul and Socrates in Dialogue: Points of Contact between the Areopagus Speech and the Apology,” *New Testament Studies* 67, no. 1 (2021): 121–33, <https://doi.org/10.1017/S0028688520000223>.

⁹Rowe is almost certainly right that the author of Acts mentions that “all the Athenians and the visiting foreigners regularly had the opportunity for nothing other than to speak or to hear something (ever) newer” (Acts 17:21) in order to expose the hypocrisy of the Areopagus in charging Paul with introducing new/foreign teaching (Rowe, *World Upside Down*, 32–33; so also, Abraham J. Malherbe, *Paul and the Popular Philosophers* [Minneapolis, MN: Fortress, 1989], 152). Paul is accused of new teaching about foreign divinities, but the Athenians are obsessed with novelty, and inclusive of all manner of foreign visitors. So then, the point is not that the members of the Areopagus are curious about Paul’s new teaching, but rather that their suspicion of Paul is hypocritical.

¹⁰It is unclear whether Paul is formally on trial, and this is a perennial subject of scholarly debate. E.g., Rowe argues that Paul is on trial (*World Upside Down*, 29–33), whereas Cowan suggests a number of ways that the passage does not give this impression (“Paul and Socrates in Dialogue,” 125–28). Cowan’s argument is undermined slightly by Timothy D. Barnes’s point that Roman imperial-era trials

were often informal and at times confusing (“An Apostle on Trial,” *Journal of Theological Studies* 20, no. 2 [1969]: 407–19), <https://www.jstor.org/stable/23960141>.

- ¹¹For a lucid and accessible introduction to textual criticism, see Bruce M. Metzger and Bart D. Ehrman, *The Text of the New Testament: Its Transmission, Corruption, and Restoration*, 4th ed. (New York: Oxford University Press, 2005).
- ¹²Bruce M. Metzger of the United Bible Societies discusses the rationale behind many of the most interesting text-critical decisions pertaining to the New Testament, and assigns each decision with a confidence rating in *A Textual Commentary on the Greek New Testament: A Companion Volume to the United Bible Societies’ Greek New Testament*, 4th ed. (Stuttgart, Germany: Deutsche Bibelgesellschaft, 1994).
- ¹³One additional manuscript reads “from one mouth” (Greek: *ex henos stomatos*), but the evidence in favor of the other two variants is much stronger, and I am not aware of any scholar who argues in favor of this being the earliest known variant.
- ¹⁴Metzger, *A Textual Commentary on the Greek New Testament*, 404–5. The standard critical text of the New Testament is produced by Deutsche Bibelgesellschaft and serves as the basis for *Novum Testamentum Graece*, which is currently in its twenty-eighth edition (Barbara Aland et al., eds., *Novum Testamentum Graece*, 28th ed. [Stuttgart, Germany: Deutsche Bibelgesellschaft, 2012]), and *The Greek New Testament*, which is currently in its fifth edition (Barbara Aland et al., eds., *The Greek New Testament*, 5th ed. [Stuttgart, Germany: Deutsche Bibelgesellschaft, 2016]). Numerous modern translations of the New Testament in various languages are based on this reconstruction of the Greek text.
- ¹⁵Metzger assigns a “B” rating to the reconstruction “from one” (Greek: *ex henos*), whereas “A” would reflect the highest degree of confidence, evidently because there was not unanimity among the committee (*A Textual Commentary on the Greek New Testament*, 404–5).
- ¹⁶Fred S. Cannon, “Acts 17:26: God Made of One [Blood]—Not of One Man—Every Ethnic Group of Humans,” *Perspectives on Science and Christian Faith* 74, no. 1 (2022): 19–38, <https://www.asa3.org/ASA/PSCF/2022/PSCF3-22Cannon.pdf>. I disagree with a number of aspects of Cannon’s analysis, and note certain points of disagreement below, but insofar as it follows from his discussion that the “from one blood” textual variant should not be dismissed as readily as modern translations imply, he makes a compelling point.
- ¹⁷The particulars of the genitive case in ancient Greek need not concern us here. In short, “one” (*henos*) is genitive because it follows “from” (*ex*).
- ¹⁸Contra Cannon, “Acts 17:26,” 21–31, it would be quite typical for a masculine adjective without a noun to be interpreted personally, as a substantival adjective. See Daniel B. Wallace, *Greek Grammar beyond the Basics: An Exegetical Syntax of the New Testament* (Grand Rapids, MI: Zondervan, 1996), 294–95.
- ¹⁹The Pauline letter collection mentions Adam and/or Eve explicitly in Rom. 5:12–21; 1 Cor. 15:21–22, 45–49; 2 Cor. 11:3; 1 Tim. 2:13–15. Jewish literature from the second temple literary period (roughly 200 BCE–200 CE) likewise makes frequent reference to Adam and/or Eve. Thomas H. Tobin, “The Jewish Context of Rom 5:12–14,” *The Studia Philonica Annual* 13 (2001): 159–75. Although

Adam and Eve are two progenitors rather than “one,” it is not unusual for Adam to be mentioned alone, both in Paul’s letters and in other Jewish texts. Further, Genesis states that God created Eve from Adam’s rib (2:21–23), so in a sense, Eve too was created from Adam, the “one.”

- ²⁰Keener, *Acts: An Exegetical Commentary*, 1:402.
- ²¹The presence of Adam as the earliest progenitor listed in Luke’s genealogy is itself an interesting consideration for discussions about human origins. I do not have sufficient space to give this passage the exegetical attention it deserves in this article, though such a treatment would certainly be profitable in the future.
- ²²Ernst Haenchen, *The Acts of the Apostles: A Commentary* (Oxford, UK: Basil Blackwell, 1971), 522; I. Howard Marshall, *The Acts of the Apostles* (Grand Rapids, MI: Eerdmans, 1980), 287; and Bruce, *The Acts of the Apostles: Greek Text with Introduction and Commentary*, 382. The text here quoted is a translation of the Septuagint (Greek) version of Isaiah, which was familiar to many of the New Testament authors, and which resembles the wording in Acts more closely than the Hebrew version.
- ²³The most accessible example of Greek genealogical literature is Hesiod’s *Catalogue of Women* (Hesiod, *The Shield. Catalogue of Women. Other Fragments* [Cambridge, MA: Harvard University Press, 2018], 40–291). For a comparison of such literature with the spread of humanity over the face of the earth in Genesis 9–10, see Guy Darshan, “The Biblical Account of the Post-Diluvian Generation (Gen. 9:20–10:32) in the Light of Greek Genealogical Literature,” *Vetus Testamentum* 63 (2013): 515–35, <https://doi.org/10.1163/15685330-12341131>.
- ²⁴On the development of the meaning of *autochthōn*, see Vincent J. Rosivach, “Autochthony and the Athenians,” *The Classical Quarterly* 37, no. 2 (1987): 294–306, <https://www.jstor.org/stable/638830>.
- ²⁵For example, Plato, *Timaeus* 22a.
- ²⁶For example, Hesiod, *Catalogue of Women*, fragment 3.
- ²⁷See Pindar, *Olympian Odes* 9.43–46; Virgil, *Georgics* 1.62–63; Ovid, *Metamorphoses* 1.318–415; and Pseudo-Apollodorus, *Library*, 1.7.2.
- ²⁸Pseudo-Apollodorus, *Library*, 1.7.2–3; cf. Plato, *Timaeus*, 22b.
- ²⁹For example, Pseudo-Apollodorus, *Library*, 1.7.3; cf. Hesiod, *Catalogue of Women*.
- ³⁰John van Seters, *Prologue to History: The Yahwist as Historian in Genesis* (Louisville, KY: Westminster John Knox, 1992), 79.
- ³¹For detailed discussion of this tradition, see Rosivach, “Autochthony and the Athenians”; and Sara L. Forsdyke, “‘Born from the Earth’: The Political Uses of an Athenian Myth,” *Journal of Ancient Near Eastern Religions* 12, no. 1 (2012): 119–41, <http://dx.doi.org/10.1163/156921212X629491>. Rosivach notes that the people of Athens held to their autochthony alongside seemingly contradictory traditions about immigrants coming from other places and being incorporated into the citizenry of Athens (Rosivach, “Autochthony and the Athenians,” 296).
- ³²Exegetes of Acts seldom suggest the “from one nation” interpretation, but see R. Sheldon Mackenzie, “The Western Text of Acts: Some Lucanisms in Selected Sermons,” *Journal of Biblical Literature* 104, no. 4 (1985): 647, <https://doi.org/10.2307/3260676>.

Article

The Design of Noah's Ark and Its Significance for Biblical Faith

³³Tessa Rajak, "The Location of Cultures in Second Temple Palestine: The Evidence of Josephus," in *The Book of Acts in Its First Century Setting: Volume 4: The Book of Acts in Its Palestinian Setting*, ed. Richard Bauckham (Grand Rapids, MI: Eerdmans, 1995), 2.

³⁴John H. Walton notes that if the "one" in Acts 17:26 refers to Adam, it would be odd to refer to human "nations" in the verse at all, since Adam is the common progenitor of humanity, not the progenitor of particular nations ("A Historical Adam: Archetypal Creation View," in *Four Views on the Historical Adam*, ed. Barrett and Caneday, 105). Walton prefers to understand the "one" to be Noah (see also Walton, *The Lost World of Adam and Eve: Genesis 2-3 and the Human Origins Debate* [Downers Grove, IL: InterVarsity, 2015], 187), but the arguments in favor of Noah work just as well as arguments in favor of the reading I propose in this section, and the Noah-based interpretation has roughly the same problems as the Adam-based interpretation.

³⁵The ambiguity between universal and local interpretations is mainly due to the flexibility of the Hebrew word *erets*, which can refer to the whole of the earth or a particular region (Francis Brown, S. R. Driver, and Charles A. Briggs, *A Hebrew and English Lexicon of the Old Testament with an Appendix Containing the Biblical Aramaic* [Oxford, UK: Clarendon Press, 1906], 75-76). Thus, the Babel account could open with, "the whole earth had one language and united words" or "the whole region had one language and united words" (Gen. 11:1), and could close with "there the Lord confused the language of all the earth" or "there the Lord confused the language of all the region" (Gen. 11:9).

³⁶For example, James M. Scott, "Luke's Geographical Horizon," in *The Book of Acts in Its First Century Setting: Volume 2: The Book of Acts in Its Graeco-Roman Setting*, ed. David W. Gill and Conrad H. Gempf (Grand Rapids, MI: Eerdmans, 1994), 542-43; Witherington, *The Acts of the Apostles: A Socio-Rhetorical Commentary*, 527; and Keener, *Acts: An Exegetical Commentary*, 3:2645.

³⁷For example, Conzelmann, *Acts of the Apostles: A Commentary on the Acts of the Apostles*, 142; and Mackenzie, "The Western Text of Acts," 647.

³⁸For particularly detailed arguments in favor of the biblical background of the speech, see Gärtner, *The Areopagus Speech and Natural Revelation*; and Kenneth D. Litwak, "Israel's Prophets Meet Athens' Philosophers: Scriptural Echoes in Acts 17,22-31," *Biblica* 85, no. 2 (2004): 199-216, <https://www.jstor.org/stable/42614509>. For treatments emphasizing philosophical backgrounds, see esp. Max Pohlenz, "Paulus und die Stoa," *Zeitschrift für die neutestamentliche Wissenschaft und die Kunde der älteren Kirche* 42 (1949): 82-98, <https://doi.org/10.1515/zntw.1949.42.1.69>; Martin Dibelius, "Paul on the Areopagus," in *Studies in the Acts of the Apostles* (New York: Scribner's, 1956), 26-77; and David L. Balch, "The Areopagus Speech: An Appeal to the Stoic Historian Posidonius against Later Stoics and the Epicureans," in *Greeks, Romans, and Christians: Essays in Honor of Abraham J. Malherbe*, ed. David L. Balch, Everett Ferguson, and Wayne A. Meeks (Minneapolis, MN: Fortress, 1990), 52-79. On similarities and differences between Paul's speech and Greco-Roman philosophical thought, see Joshua W. Jipp, "Paul's Areopagus Speech of Acts 17:16-34 as Both Critique and Propaganda," *Journal of Biblical Literature* 131, no. 3 (2012): 567-88, <https://doi.org/10.2307/23488255>.

³⁹Especially Dibelius, "Paul on the Areopagus," 35-37; and Pohlenz, "Paulus und die Stoa," 88.

⁴⁰F. F. Bruce, *The Book of Acts*, rev. ed. (Grand Rapids, MI: Eerdmans, 1988), 331; Fitzmyer, *The Acts of the Apostles*, 609-10; and Henry Dyson, *Prolepsis and Ennoia in the Early Stoa* (Berlin, Germany: de Gruyter, 2009), 4.

⁴¹Likewise, Jerome H. Neyrey highlights differences between stereotypical Stoic and Epicurean perspectives on the judgment of God and shows that Paul's speech is much more consistent with the Stoic position ("Acts 17, Epicureans, and Theodicy: A Study in Stereotypes," in *Greeks, Romans, and Christians: Essays in Honor of Abraham J. Malherbe*, ed. Balch, Ferguson, and Meeks, 118-34). Indeed, he suggests that the people who rejected Paul should be understood to be Epicureans, whereas those who desired to hear Paul again should be identified with Stoics (Acts 17:32).

⁴²For an overview of Stoic cosmology, see Michael Lapidge, "Stoic Cosmology," in *The Stoics*, ed. John M. Rist (Berkeley, CA: University of California Press, 1978), 161-85.

⁴³Seneca, *Moral Epistles* 47.10; and ____, *Epistles, Volume I: Epistles 1-65*, trans. Richard M. Gummere, 3 vols. (Cambridge, MA: Harvard University Press, 1917), 1:307. Cf. ____, *Moral Epistles* 44.1-2.

⁴⁴Seneca, *Moral Epistles* 95.52; and Dio Chrysostom, *Orations*, 36.30. For additional citations and discussion, E. A. Judge, *The First Christians in the Roman World: Augustan and New Testament Essays* (Tübingen, Germany: Mohr Siebeck, 2008), 588-94. For detailed comparison of Acts 17 and Seneca, *Moral Epistles* 95 in particular, see Brian J. Tabb, "The Nature of True Worship: Reading Acts 17 with Seneca, *Epistle* 95," in *Paul and the Greco-Roman Philosophical Tradition*, ed. Joseph R. Dodson and Andrew W. Pitts (London, UK: Bloomsbury T&T Clark, 2017), 263-78.

⁴⁵Cicero, *Laws*, 1.24; and ____, *On the Republic and On the Laws*, trans. Clinton W. Keyes (Cambridge, MA: Harvard University Press, 1928), 325.

⁴⁶For example, Cleanthes, *Hymn to Zeus*; Cicero, *Laws* 1.24; and Dio Chrysostom, *Orations* 12.30, 42.

⁴⁷Lucien Legrand, "The Unknown God of Athens: Acts 17 and the Religion of the Gentiles," *Indian Journal of Theology* 30 (1981): 162.

⁴⁸Balch, "The Areopagus Speech," 77.

⁴⁹See Cicero, *Nature of the Gods* 2.12 and Dio Chrysostom, *Orations* 12.33; cf. Plutarch, *Against the Stoics on Common Notions* 31-34 and Sextus Empiricus, *Against the Mathematicians* 9.61.

⁵⁰Cicero, *Laws* 1.24; ____, *Offices* 3.6.28; and Dio Chrysostom, *Orations* 7.138.

⁵¹Dibelius argues further that Paul's references to the divinely mandated seasons and geographical boundaries of humanity's habitation on the earth (Acts 17:26) likewise corresponds to Hellenistic philosophy in general, and Stoicism in particular ("Paul on the Areopagus," 97-101), but this interpretive point is less decisively clear. For contrasting arguments, see Pohlenz, "Paulus und die Stoa," 85-87; Walther Eltester, "Gott und die Natur in der Areopagrede," in *Neutestamentliche Studien für Rudolf Bultmann zu seinem 70. Geburtstag am 20. August 1954*, ed. Walther Eltester, rev. ed. (Berlin, Germany: Töpelmann, 1957), 202-27; and Arthur Darby Nock, *Essays on Religion and the Ancient World*, 2 vols. (Cambridge, MA: Harvard University Press, 1972), 2:830.

⁵²Diogenes Laertius, *Lives of the Eminent Philosophers* 7.33; cf. Plutarch, *Morality* 1034B and Lactantius, *Divine Institutes*

- 2.2.14. See Jipp, "Paul's Areopagus Speech of Acts 17:16-34," 577-78; and Patrick Gray, "Implied Audiences in the Areopagus Narrative," *Tyndale Bulletin* 55, no. 2 (2004): 213-14.
- ⁵³On Epicurean opposition to idols, see C. K. Barrett, "Paul's Speech on the Areopagus," *New Testament Christianity for Africa and the World*, ed. Mark Glasswell and Edward Fasholé-Luke (London, UK: SPCK, 1974), 74-75.
- ⁵⁴Mark D. Given, "Not Either/or but Both/and in Paul's Areopagus Speech," *Biblical Interpretation* 3, no. 3 (1995): 356-72, <https://doi.org/10.1163/156851595x00186>; Daniel Marguerat, "Luc-Actes entre Jérusalem et Rome. Un procédé lucanien de double signification," *New Testament Studies* 45 (1999): 70-87; Hans-Josef Klauck, *Magic and Paganism in Early Christianity: The World of the Acts of the Apostles* (Minneapolis, MN: Fortress, 2003), 85; Rowe, *World Upside Down*, 199; and Jipp, "Paul's Areopagus Speech of Acts 17:16-34," 581-82.
- ⁵⁵One could potentially argue along similar lines in favor of a double entendre involving the biblical conception of descent from one nation (i.e., the people of Babel) and the Stoic conception of origination from one divine source, though I am not aware of any scholar who takes such a position.
- ⁵⁶Cannon, "Acts 17:26," 34. Kenneth D. Keathley likewise appeals to the "from one blood" reading to establish that humans belong to a singular race, though it is not explicit whether he is aware of the textual variants for this verse ("Rescuing Adam: Three Approaches to Affirming a Historical Adam," *Southeastern Theological Review* 8, no. 1 [2017]: 58).
- ⁵⁷Along similar lines, Kenneth W. Kemp interprets Acts 17:26 (apparently whether or not "blood" is accepted as original to the text) to convey the idea of "from one stock," which challenges claims of Athenian autochthony ("Science, Theology, and Monogenesis," *American Catholic Philosophical Quarterly* 85, no. 2 [2011]: 218, <https://doi.org/10.5840/acpq201185213>).
- ⁵⁸This is how, e.g., Jipp understands the "from one blood" textual variant ("Paul's Areopagus Speech of Acts 17:16-34," 581-82), though he considers the variant without "blood" to be earlier. Likewise, Metzger's commentary on the "from one blood" variant assumes that this reading is intended to refer to Adam's bloodline (*A Textual Commentary on the Greek New Testament*, 404-5). The biggest weakness of Cannon's treatment of Acts 17:26 is that he argues extensively in favor of the "from one blood" reading of the text, only to take for granted that this reading implies polygenism over monogenism ("Acts 17:26," 34), though a monogenetic interpretation is perfectly plausible.
- ⁵⁹Walton attempts to work around this difficulty by rightly pointing out that the focus of Paul's rhetoric in this passage is geopolitical, historical, and societal, rather than biological (*The Lost World of Adam and Eve*, 186-87). In other words, the passage is making a point about the origin of nations from the three sons of Noah, not about genetics. However, Walton does not address the issue that polygenism would also invalidate the point of the passage thusly interpreted. If unity across nations is based on common descent from Noah and Noah is not a common ancestor for all people, then the foundation for unity evaporates.
- ⁶⁰For example, Haarsma, *When Did Sin Begin? Human Evolution and the Doctrine of Original Sin*, 80-81.
- ⁶¹For example, Paul Seely, "Concordism and a Biblical Alternative: An Examination of Hugh Ross's Perspective," *Perspectives on Science and Christian Faith* 59, no. 1 (2007): 41-43, <https://www.asa3.org/ASA/PSCF/2007/PSCF3-07Seely.pdf>.
- ⁶²See Kenneth J. Howell, *God's Two Books: Copernican Cosmology and Biblical Interpretation in Early Modern Science* (Notre Dame, IN: University of Notre Dame Press, 2002), esp. 210-11. As Howell notes, the dictum of the unity of truth is rooted in particular in the contribution of Saint Augustine of Hippo. For detailed discussion of Augustine's treatment of this subject, see also Ernan McMullin, "From Augustine to Galileo," *Modern Schoolman* 76, no. 2/3 (1999): 169-94, <https://doi.org/10.5840/schoolman1999762/324>; ____, "Galileo's Theological Venture," *Zygon* 48, no. 1 (2013): 192-220, <https://dx.doi.org/10.1111/j.1467-9744.2012.01320.x>; and Paul Allen, "Augustine and the Systematic Theology of Origins," in *Augustine and Science*, ed. John Doody, Adam Goldstein, and Kim Paffenroth (Lanham, MD: Lexington Books, 2013), 9-26.
- ⁶³See Howell, *God's Two Books*, 199; Richard J. Blackwell, *Galileo, Bellarmine, and the Bible: Including a Translation of Foscarini's Letter on the Motion of the Earth* (Notre Dame, IN: University of Notre Dame Press, 1991), 166-73. Numerous other excellent books on the Copernican revolution and its relevance for science and faith are also available.
- ⁶⁴Blackwell, *Galileo, Bellarmine, and the Bible*, 171.
- ⁶⁵*Ibid.*, 171-73.
- ⁶⁶*Ibid.*, 172.
- ⁶⁷For example, Acts 17:26 is never discussed in Daniel M. Harrell, *Nature's Witness: How Evolution Can Inspire Faith* (Nashville, TN: Abingdon Press, 2008); Denis O. Lamoureux, *Evolutionary Creation: A Christian Approach to Evolution* (Eugene, OR: Wipf & Stock, 2008); Johnny V. Miller and John M. Soden, *In the Beginning ... We Misunderstood: Interpreting Genesis 1 in Its Original Context* (Grand Rapids, MI: Kregel, 2012); George L. Murphy, *Models of Atonement: Speaking about Salvation in a Scientific World* (Minneapolis, MN: Lutheran University Press, 2013); William T. Cavanaugh and James K. A. Smith, eds., *Evolution and the Fall* (Grand Rapids, MI: Eerdmans, 2017); Venema and McKnight, *Adam and the Genome*; and Peter Enns, *The Evolution of Adam: What the Bible Does and Doesn't Say about Human Origins*, 2nd ed. (Grand Rapids, MI: Brazos, 2021). Those who do mention Acts 17:26 seldom spend more than a few sentences on it (e.g., Haarsma, *When Did Sin Begin?*, 115), although Walton devotes a full two-page section (*The Lost World of Adam and Eve*, 186-87) and Cannon, recently, a full article ("Acts 17:26").
- ⁶⁸Most biblical scholars will balk at this proposal, since modern biblical scholarship typically follows a descriptive rather than normative paradigm. In other words, the biblical texts are analyzed in their own right by objective methods, regardless of the implications for theology and communities of faith. However, individuals and communities of faith generally look to scripture to establish norms for belief and practice, and in such a context, the scientific plausibility of an interpretation is a relevant consideration among many others.
- ⁶⁹A salient example is E. P. Sanders, *Paul and Palestinian Judaism: A Comparison of Patterns of Religion* (Philadelphia, PA: Fortress, 1977), which caused a massive shift in how Paul was understood to engage first-century Jewish interpretation of the Torah.



Alan Dickin

Article

The Design of Noah's Ark and Its Significance for Biblical Faith

Alan Dickin

This article reexamines the design of Noah's ark based on a combination of biblical and Mesopotamian sources. Although the biblical description of Noah's ark is considered to be divinely inspired, it seems questionable whether it could have been built to the size and design that is popularly conceived. The Genesis account lacks detail about the method of construction, but since it shows evidence of a common source with ancient Mesopotamian versions, these can provide additional information to constrain our interpretation of the Bible. For example, the very large amounts of bitumen specified in the Mesopotamian sources suggest that this was used as a structural component, to reinforce a raft-like ark and create a smooth and durable platform for large numbers of animals. On this platform, a reed-built hut could have been securely fastened to provide a dry shelter for human habitation and food storage; that being the case, and using readily available materials, it was possible to construct a large and sea-worthy ark of the dimensions specified in Genesis, using primitive ancient tools.

Keywords: Noah's ark, Mesopotamia, Ark Tablet, Neolithic, bitumen, mudhif

The account of Noah and his ark is one of the foundational stories of the Bible. Many modern commentators argue that it reads more like a parable than a description of real events, but this may be because they have misunderstood its ancient setting.¹ In contrast, the biblical book of Hebrews cites the faith of the ancient patriarchs as inspiration for contemporary belief in God. Prominent in the list of these ancient heroes is the patriarch Noah, who is commended for his faith in building the ark in obedience to God's command (Heb. 11:7).

The significance of this story for Christian faith is demonstrated by its endless recitation in Sunday school. But if children, thus instructed, later discover that the

story was an exaggeration of the truth, it is apt to have the opposite effect from the one intended, causing them to lose their faith in the reliability of the Bible as a guide to faith. Creationists take this threat seriously, as demonstrated by the reported \$100 million that Answers in Genesis spent to build the Ark Museum in Tennessee.² But do other Christian organizations give the story of Noah's ark the serious attention that it merits?

Some might argue that even if the historicity of Noah's ark is an important question, there is little we can do about it, because there is no new evidence to bring to bear and therefore no merit in further discussion. Claims to find actual remains of the ark on Mount Ararat (Northeast Turkey) have been definitively rejected, and these so-called remains have been shown to consist of a folded rock formation with no connection whatever to the flood.³ However, there is a substantial amount of new literary evidence from

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ancient Mesopotamia that can shed further light on the design of the ark, thus prompting the present contribution.

It is important to note that among the figures of faith listed in the book of Hebrews, the flood hero (a generic name for Noah) is by far the most well-attested person outside the Bible. His experience is described in three distinct Mesopotamian traditions: the Sumerian flood story (ca. 1700 BC); the Atrahasis Epic (ca. 1700 BC, written in Akkadian cuneiform); the Gilgamesh Epic (ca. 700 BC, also in Akkadian); and several fragments from outside Mesopotamia.⁴ In contrast, several other heroes of faith mentioned in Hebrews—Abraham, Isaac, Jacob, Joseph, and Moses—are not attested in any ancient source outside the Bible and its derivative Jewish literature. This makes the testimony of the flood hero particularly important among claimed ancient eyewitness sources.

Specific events described in the biblical and Mesopotamian flood stories provide good evidence that these accounts were all ultimately derived from a common source. For example, it has been known, since the late nineteenth century, that both the Bible and the Gilgamesh Epic describe how the flood hero sent out a series of birds to test for the abatement of the floodwaters.⁵ This commonality suggests that the Mesopotamian sources contain important information that could help us to better interpret the account of the flood given in Genesis. There are many aspects of this account that are historically important, but the principal one of interest here is the reported size and design of the ark.

Until recently, the only Mesopotamian source that gave a detailed description of the ark itself was also the youngest, the flood story in the Gilgamesh Epic. However, this situation changed when Irving Finkel deciphered a small but nearly complete tablet that was brought to him for examination at the British Museum.⁶ This tablet shows strong stylistic evidence of being an excerpt from the early second-millennium BC Atrahasis Epic, and it happens to fill a large gap of missing lines in the previously known cuneiform account. Finkel published this “Ark Tablet” in 2014, and it has the potential to influence our interpretation of the biblical account of Noah’s ark. Since then, a critical reevaluation of all of the flood stories written in Akkadian was carried out by Nathan

Wasserman, but he did not reassess Finkel’s interpretation of the design of the ark.⁷ This prompts a detailed re-examination here of the design of the ark.

The Biblical Description of the Ark

Some people might argue that Mesopotamian sources have nothing useful to add to a description of the ark, relative to the information we already have in the Bible. However, this opinion overlooks important evidence about the history of interpretation of Noah’s ark in Genesis, which is highly pertinent to our modern approach to the story. For example, the very word “ark” embodies a particular interpretation of the Hebrew text that is not necessarily obvious or even correct. Specifically, the English word ark is a direct transliteration of the Latin word *arca*, meaning a box. But this interpretation of the ark as a box is not based on the Hebrew text of Genesis, but on the Greek Septuagint translation.

In the Hebrew scriptures, the word used for the ark (*tevah*) is unique to the stories of Noah’s flood and the birth of Moses. The latter story (Exod. 2:3) describes how Moses’s mother placed him in a basket of papyrus covered in bitumen. In the Septuagint, Moses’s basket is translated by the rare Greek word *θήβις* (*thibis*), used in Egyptian Greek to mean a “basket made of papyrus.” On the other hand, the Septuagint translates Noah’s *tevah* as a *κιβωτός* (*kibotos*), meaning a “wooden chest.” This is the same word used in the Septuagint for the Ark of the Covenant, despite the fact that this ark is represented by a completely different Hebrew word, *arawn*. Of the 202 usages of *arawn* in the Hebrew scriptures, 196 refer to the Ark of the Covenant, five refer to a money chest set up by King Joash for temple offerings (2 Kings 12:9), and one is used to describe Joseph’s coffin (Gen. 50:26).

It is clear from its description in Exodus 25:10 that the Ark of the Covenant really was a wooden chest. And the usages of the word *kibotos* in Attic Greek confirm that this is exactly what the word normally means: a money chest, a coffer, a case for apples, or a box of scrolls.⁸ On the other hand, there is no basis in the Hebrew text of the flood story for thinking that Noah’s enormous boat was a wooden chest. Therefore, the translators of the Septuagint may have been influenced to use this expression by the Greek flood myth, whose hero Deucalion was reputed to

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have survived the flood with his wife Pyrrha in a wooden chest.⁹

The word used in Greek mythology for Deucalion's ark is actually *λάρναξ* (*larnax*), but this has a very similar range of meanings to *kibotos*: a coffer, box, or chest. However, the word *larnax* is also used to describe a chest used in the well-known trope of "exposure," in which a victim (usually a child but sometimes a pregnant woman) is locked in a chest, which is then thrown into the sea to drown them. Typically in myth, the intended victim nevertheless survives by being washed up on a beach.

The translators of the Septuagint may have chosen not to use the word *larnax*, because Noah's ark was intended to preserve life, rather than to dispose of the victim. Instead, the Septuagint uses the same word as for the Ark of the Covenant, perhaps to emphasize the life-preserving aspects of Noah's ark and disguise a direct link with Deucalion's chest. However, by describing Noah's ark as a chest rather than a boat, the Septuagint is nevertheless implying a link between the biblical and Greek flood stories.

These links were made more explicit by first-century Hellenistic Jews and second-century Christians.¹⁰ For example, Philo of Alexandria specifically identified Noah as the Hebrew equivalent of the Greek Deucalion in his *De Praemiis et Poenis*.¹¹ On the other hand, Flavius Josephus re-told the biblical flood story in his *Antiquities*, but used the word *larnax* for the ark, arguably in an attempt to "synthesize Jewish and Hellenistic culture."¹² Later, the Church Father Theophilus of Antioch made a comparison of the Greek and biblical flood stories in his *Ad Autolyicum*.¹³ His objective was to show the greater reliability of the biblical story, but the need for the apologetic suggests that the link between these accounts was already well known.

The Septuagint was the principal version of the Old Testament available to the New Testament writers.¹⁴ Therefore, it is not surprising that the translation of Noah's boat as a *kibotos* was perpetuated in New Testament quotations of the sayings of Jesus (Matt. 24:38 and Luke 17:27), the letter to the Hebrews (Heb. 11:7), and the first letter of Peter (1 Pet. 3:20). Similarly, the earliest Latin translations of the Old Testament were derived directly from the Septuagint.¹⁵ Therefore, they translated Noah's boat using the Latin word for a wooden chest (*arca*).

And even when Jerome revised the Latin Bible, consulting the Hebrew originals to create the Vulgate, it was inevitable that he was constrained by the New Testament usage of *kibotos* to retain the Latin word *arca* to describe Noah's boat in Genesis. This in turn led to the English word "ark." However, it has always been evident that the giant size of Noah's boat described in Genesis would have been very improbable as an ancient box-like vessel. This causes a dilemma. One can accept the size of the ark described in Genesis and reject its box-like form, or one can accept the box-like shape implied by the Septuagint, and regard the dimensions as schematic or symbolic.

Artistic Depictions of Noah's Ark

In approaching problematical issues in Genesis, such as the days of Genesis 1 or the shape of the ark, the early church fathers had a long history of allegorical interpretation.¹⁶ Therefore, it is not surprising that depictions of Noah's ark in the Roman era focused on its symbolic character as a box and ignored the massive size described in Genesis. The earliest known example is a coin from the reign of Septimius Severus (ca. 200 AD), which shows Noah's ark on the reverse (fig. 1a).¹⁷ The ark is shown as a wooden chest containing the flood hero and his wife, as described in the Greek flood myth. However, the label "Noe" shows that this was actually intended as a depiction of the biblical flood story. Two birds are shown, one of which is clearly the dove sent out by Noah, since it carries an olive branch. To the left, Noah and his wife are shown on dry land after emerging from the ark.

The choice of the ark motif for the reverse side of this coin is believed to derive from the city where it was minted, Apamea in Asia Minor (modern Turkey). This city had apparently been given the nickname of *Kibotos*, based on the prevalent use of wooden chests for transporting trade goods. Local Jewish merchants therefore chose this illustration for a coin struck in their city as a play on the name of the city and the flood tradition.¹⁸ The minting of this coin shortly after Bishop Theophilus wrote *Ad Autolyicum* seems to confirm that the Deucalion and Noah flood stories had become significantly conflated in the ancient Greek-speaking world.¹⁹

A similar box-like ark can be seen in several third- and fourth-century frescoes from Christian

catacombs near Rome (not shown here).²⁰ These frescoes typically show Noah alone, standing in a small floating chest and accompanied by a dove. This depiction therefore suggests that the Greek conflation of the Noah and Deucalion traditions had now reached the Western church. However, this is not surprising, since we noted above that the Latin Old Testament was derived from the Septuagint.

A very different portrayal of the ark is found in the *Vienna Genesis*, an early illuminated manuscript of the Septuagint, dated to the sixth century AD.²¹ This manuscript contains two paintings of the ark, during and after the flood, but the ark now has the appearance of a stepped three-story building.²² Andreina

Contessa suggested that this depiction was based on Origen's *Homilies on Genesis*, which describes the ark as having the shape of a stepped pyramid.²³ The approximate size of the ark can be judged in comparison with a horse which leads a series of billowing waves (fig. 1b). The ark is also surrounded by many drowning bodies, not shown in figure 1b. It is listing at a drunken angle, as if on the point of sinking, but its survival is demonstrated by the emergence of the animals from the same "ark building" after the flood (not shown here).

Perhaps a few decades later, the Ashburnham Pentateuch is the earliest surviving manuscript of the Vulgate (Latin) Pentateuch, recently dated to around

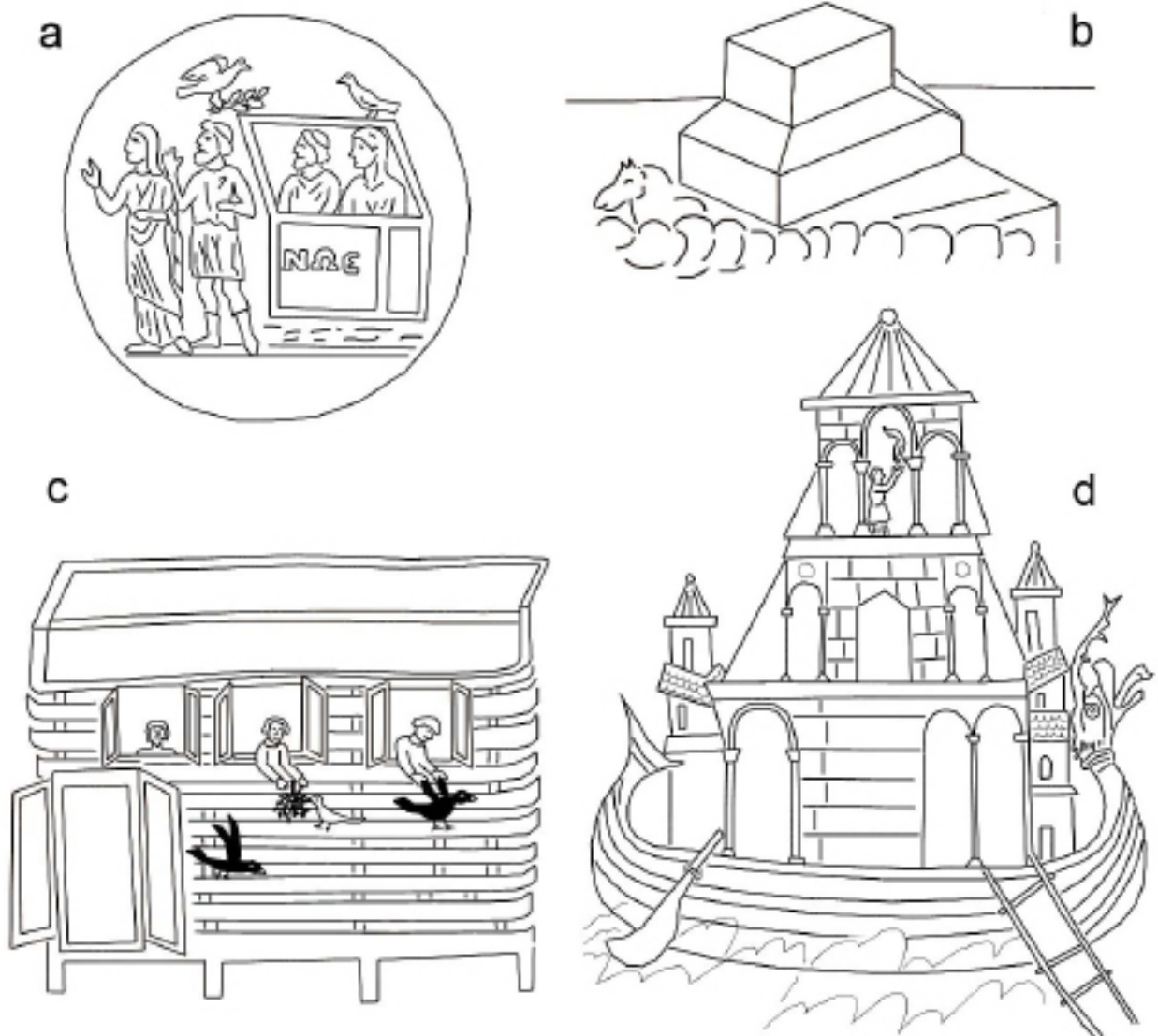


Figure 1. Depictions of Noah's ark during the first millennium AD. (a) reverse side of a coin of Septimius Severus showing Noah's ark as a chest; (b) the floating ark in the *Vienna Genesis* (drowning bodies omitted); (c) the ark after the flood in the Ashburnham Pentateuch (all figures except Noah omitted); (d) the ark in the *Junius Manuscript* (all figures except Noah omitted).

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600 AD.²⁴ This manuscript also has two illustrations of the ark, during the flood and in its immediate aftermath.²⁵ The ark is again represented as a kind of three-story building, whose size is indicated by the figure of Noah in each of the upper windows, with a succession of birds (fig. 1c). However, the legs underneath the ark and the open lid suggest an origin as a wooden chest, which nevertheless also has the appearance of a giant basket. Bezalal Narkiss argued that the iconography in the Ashburnham Pentateuch was inspired by Syrian Jewish manuscripts of Genesis.²⁶ Hence, this may explain how a Vulgate Bible contains an illustration of the ark as a combination of chest, basket, and building.

A few centuries later, several images of the ark are found in late Saxon biblical manuscripts dating to near the end of the tenth century AD. The *Junius Manuscript* (fig. 1d) continues the motif of a stepped three-story building, and Noah is seen releasing

a bird from the top story (fig. 1d).²⁷ However, this structure is now carried securely by what looks like a Viking longship, complete with a pagan-looking figurehead. This image of a building carried on a ship establishes the appearance of the ark in most subsequent art. For example, the late fifteenth-century *Nuremberg Chronicle* (not shown here) depicts the ark as something like a small galleon.²⁸ Similar images continue up to the present day, with the common depiction of the ark in children's Bibles as a wooden cargo ship, and with the full-sized but nonfloating replica of the ark recently constructed by Answers in Genesis.²⁹

Difficulties in Building Large Wooden Ships

The box-shaped form of the ark described above creates a fundamental shipbuilding problem, because it constitutes a large displacement vessel. This type

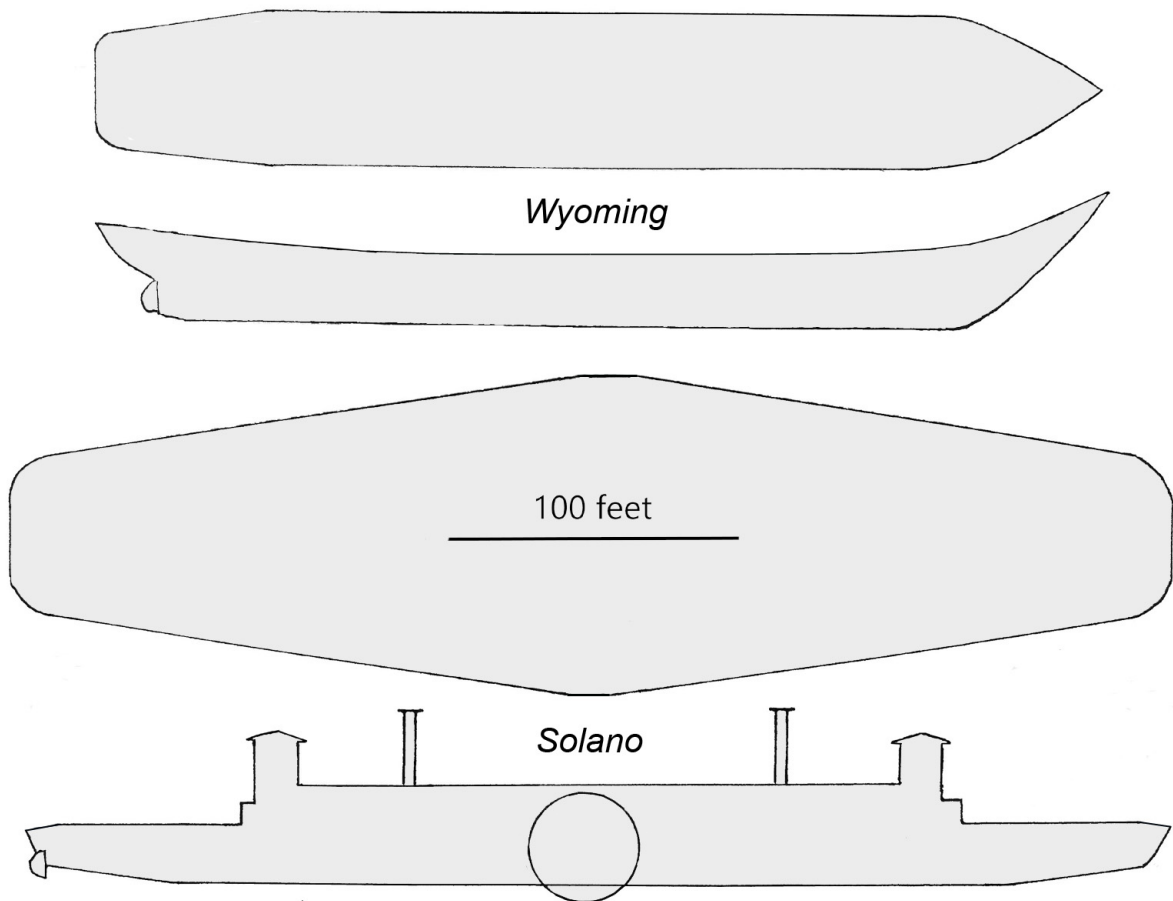


Figure 2. Comparison of the profile and deck area of the *Wyoming* and *Solano* wooden ships, shown to the same scale.

of ship relies for its buoyancy on the volume of air that fills its hull. If the hull leaks, the buoyancy is lost and it becomes a waterlogged wreck. Furthermore, as the tonnage of such a vessel is increased, it draws more water, so that the water pressure at the keel is increased. This requires more perfect fitting of the planks to create a watertight hull than is necessary for a small vessel, and would have been relatively impossible using the primitive tools available at the most likely date of Noah's flood.

An early date for the flood is implied by the claim in the Table of Nations (Genesis 10) that all Middle Eastern peoples were descended from Noah. This requires that the flood occurred relatively soon after the Agricultural Revolution allowed the colonization of the plain of Mesopotamia. Detailed arguments for a late Neolithic date for Noah's flood were presented in this journal by Dickin.³⁰ That paper cited various lines of paleoclimate evidence pointing to a late Neolithic date. These included geochemical records from cave stalactites near Jerusalem that suggested that a "deluge period" of intense river flooding occurred around 5600 BC.³¹ However, such a late Neolithic date for the flood implies that the tools available to build the ark were relatively primitive.

Even in modern times, building a sea-worthy wooden ship with a hull the size of the ark has proved impossible. The largest commercial wooden ship ever built was the schooner *Wyoming*, with a deck area around 16,500 square feet, about half of the reported size of Noah's ark (33,750 square feet).³² The *Wyoming* was strengthened with wrought iron cross-bracing to increase her rigidity, but the size of her hull caused excessive flexing of the planking in stormy weather.³³ She leaked habitually, and sank in a storm with the loss of all hands.

A closer comparison can be made with the largest wooden paddle-steamer ever built, the rail ferry *Solano*.³⁴ This ferry was built to transport trains across the one-mile-wide Carquinez Strait in California, and was therefore designed for sheltered water only. She is shown in elevation and plan form in figure 2, in comparison with the *Wyoming*. This comparison shows that the *Solano* had a much larger deck area than the *Wyoming*, and quite close to the stated dimensions of Noah's ark. However, her hull was only about 60 feet wide, the rest of her width accommodating the paddle wheels.

The height of the *Solano's* hull was only 18 feet, but the height from her keel to the top of her bridge was 56 feet, which is considerably more than the reported height of the ark (45 feet). This comparison suggests that it would be quite wrong to interpret the reported size of the ark as the size of her hull, since we have little indication from the Hebrew text that she had a hull at all. On the contrary, it was shown above that the idea that the ark had a hull is derived from the Septuagint and early iconographic depictions, which were clearly influenced by Greek mythological thinking. On the other hand, it was demonstrated that the biblical account of the flood shares a common origin with (early) Mesopotamian sources. These sources clearly provide much more reliable evidence for the design of the ark than much later Greek mythology.

Evidence from Mesopotamian Sources

It was mentioned above that the Gilgamesh Epic contains the most-detailed Mesopotamian account of the flood, with the closest similarities to the Bible. However, it is also well established that the Gilgamesh Epic was derived by combining several older Sumerian myths, most of which are known independently.³⁵ Since the main theme of the epic is the quest of the hero Gilgamesh for the lost secret of eternal life, the flood story was included in the epic on the pretext that the flood hero was the only person ever to receive eternal life from the gods. Consistent with this role, the flood hero is introduced into the epic under the name "Uta-napishtim," meaning "he found life."

Uta-napishtim recounts the story of the flood to Gilgamesh in order to explain how he received eternal life from the gods. However, when the gods are "overheard" in the story arguing about who warned any man about the impending flood, the god Enki (Ea in Assyrian) refers to the flood hero as Atrahasis ("extra-wise"), the name used in the older (1700 BC) Atrahasis Epic.³⁶ This evidence from the name of the flood hero shows clearly that the flood story of the Gilgamesh Epic is derived from the Atrahasis Epic. It follows also that the biblical story of the flood comes from a source that is largely in common with the early second-millennium BC Atrahasis Epic. Most importantly, the newly discovered Ark Tablet also refers to the flood hero as Atrahasis, and also begins with a very well-known line from the Atrahasis Epic,

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in which the god Enki is whispering like the wind through the walls of a reed hut, to tell Atrahasis to build a boat to save his family:

Wall, listen constantly to me

Reed hut, make sure you attend to all my words

Dismantle the house, build a boat ...³⁷

Based on this evidence that the Ark Tablet has a common source with the most complete and oldest extant Mesopotamian text of the flood, the Ark Tablet should be given serious attention to elucidate the meaning of the less detailed description of the ark in Genesis.

The Ark Tablet

The Ark Tablet describes the deck area of the ark as one Sumerian field (120 cubits on each side), an area of approximately 32,400 square feet. Importantly, this is in excellent agreement with the Genesis ark, whose area was quoted above as 33,750 square feet (assuming a cubit of 18 inches). However, the Ark Tablet also specifies that her shape should be circular, and confirms this by stating that her length and breadth should be equal. The Gilgamesh Epic agrees that the area of the ark should be one field, and her length and breadth equal. However, the two sources disagree regarding the height of the ark. Here the Gilgamesh Epic claims her height to be equal to her length and breadth (10 nindan or "poles" = 120 cubits = 180 feet), whereas the Ark Tablet specifies a height of only 1 nindan (18 feet). In this case, it appears that the height of the ark in the Gilgamesh Epic was modified for the sake of grandiloquence. However, this has tended to undermine the credibility of the Gilgamesh Epic as a serious account of the design of the ark.

Here, the evidence from the Ark Tablet is crucial.³⁸ Because it agrees closely with the deck area of the ark given in Genesis, it suggests that we should take these measurements seriously as approximations to the real dimensions of Noah's ark, rather than as symbolic or hyperbole, as many scholars have proposed.³⁹ An ark the size of a Sumerian field seems quite reasonable to accommodate the large number of domesticated animals to be taken on board. This probably included seven pairs of each species (Gen. 7:2), since some of these animals were sacrificed immediately after the flood (Gen. 8:20). However, during the evolution of the flood story from an oral source, the original dimensions of a

Mesopotamian field may have gained a precision that was never intended.

Finkel suggested that before his translation of the Ark Tablet, no one would ever have imagined a circular ark.⁴⁰ But in fact, Stephanie Dalley had already interpreted the description of the ark in the Gilgamesh Epic as probably inspired by a coracle-like vessel, variously called a quffah or guffa.⁴¹ Finkel likewise interpreted the ark as a "scaled-up" coracle, made by winding a rope of palm fiber into a giant mat, attaching this to a wooden frame, and then waterproofing it with a liberal coating of bitumen. Inspired by Finkel's interpretation, a TV company financed an attempt to build a partially scaled-up version of a coracle-type ark, and made a documentary of the attempt.⁴² This "TV-Ark" was about 20% of the diameter reported in the Ark Tablet, meaning nearly 50 feet across. It was waterproofed underneath with bitumen, but leaked very badly, and was only made to float by using a high-powered mechanical pump.

Although Finkel claimed that the "TV-Ark" vindicated his interpretation of the design specified in the Ark Tablet, he admitted that a coracle of the size described in the Ark Tablet could never actually be built. He argued that the design specified in the Ark Tablet was a *conceptual* scaling up of an ancient coracle, rather than an eye-witness description of Noah's ark. But is this a credible interpretation? I suggest that with their practical experience of coracle-like vessels, ancient scribes and/or listeners to the Atrahasis Epic would have known very well that a conceptually scaled-up coracle was a bogus design for the giant ark of the ancient tradition. This prompts us to ask whether there is an alternative interpretation of the Ark Tablet that would be both feasible to build, capable of surviving a storm, and consistent with the description of the ark given in Genesis.

Structural Details in the Ark Tablet

To understand the structure of Atrahasis's ark in detail, I quote from Finkel's translation of lines 13–16 of the Ark Tablet:

I set in place 30 ribs,

which were one parsiktu-vessel thick, ten nindan long;

I set up 3600 stanchions within her (to make her heart firm)

that were half [a parsiktu vessel] thick, half a nindan long.

From these measurements, we can see that the structure of the vessel was based on 30 major ribs, each 180 feet long, with a thickness similar to a bushel basket (about 18 inches). As proposed by Finkel, these ribs were divided into two sets of 15 ribs each. One set is placed in the horizontal plane, the 15 ribs parallel to each other, spaced 12 feet apart. The second set is laid directly over the first set but at right angles to the first set, again with the 15 ribs parallel and spaced 12 feet apart. These were fastened together, forming a square grid. Note that the spacing of 12 feet would frame a hull with an area of one Sumerian field (32,400 square feet).⁴³ However, this spacing is far too great to adequately support a hull made from a palm-rope basket.

The word translated “stanchion” by Finkel is the Akkadian word *imdi*. He inferred that these “stanchions” were vertical posts that supported a major deck half-way up the total height of the coracle’s hull. However, with only 30 major ribs, these 3,600 posts (with a thickness of about 10 inches each) would have to be set every 18 inches along each rib. This leaves only 8 inches between individual verticle stanchion along the ribs, thus forming an almost continuous row of vertical posts along the ribs. However, with 12-foot gaps between the ribs, the stanchions are 8 inches apart in one direction and 12 feet apart in the other (i. e., at right angles). This is a highly uneven and unlikely spacing. Furthermore, the Ark Tablet does not specify any timber for the decking to be built on these stanchions, or for a roof over the ark, which would have been necessary to prevent it from filling with rainwater. This interpretation seems very unsatisfactory.

To test Finkel’s translation of *imdi* as a vertical stanchion, we need to examine other uses of the word in Assyrian/Babylonian sources. These usages indicate that *imdi* has a basic meaning of “support,” commonly to do with the foundations of walls. However, vertical posts are not necessarily implied. For example, a royal inscription of Nebuchadnezzar II (ca. 600 BC) describes how he reinforced the city wall of Babylon as follows:

In order to strengthen the area outside the (double inner) wall I made a third (wall): I built as an “imdi” a large “assure” up against the base of a baked-brick wall. I built it on the breast of (the underworld) and made its foundation platform solid.⁴⁴

In other records of this work, the nature of the *assuru* is explained: it was made of bitumen and baked brick.

This example shows that *imdi* can mean a general type of support, with no implication of a vertical post. A quite different type of structure can be inferred. Rather than seeing the *imdi* as supporting a middle deck which is otherwise not described at all, we could see the *imdi* in the Ark Tablet serving as horizontal supports for the *bottom* floor of the ark, in the same plane as the floor. The way that this could work is shown in figure 3. The *imdi* are wooden logs about 9 feet long and 10 inches thick (2), which are laid across the main ribs (1) in order to support the floor of the ark. Because the floor supports are at right angles to the main ribs, the latter need to be laid in one direction only, and can therefore be set only 6 feet apart. By staggering the cross supports, they hold the main ribs together in a rigid framework.

The Ark Tablet also specifies the use of a very large quantity of palm-fiber rope. As noted above, Finkel believed that this rope was intended to make a basket-like hull. However, since he also admitted that this design could never be scaled up to the size of the ark, it seems more likely that the large quantity of rope was to be used to bind together the main ribs and the floor supports. Based on the substantial size of the wooden components, very large amounts of rope would have been needed to construct an ark that was one field in area.

The plan view in figure 3 shows that when a platform is made in this way by binding together rough

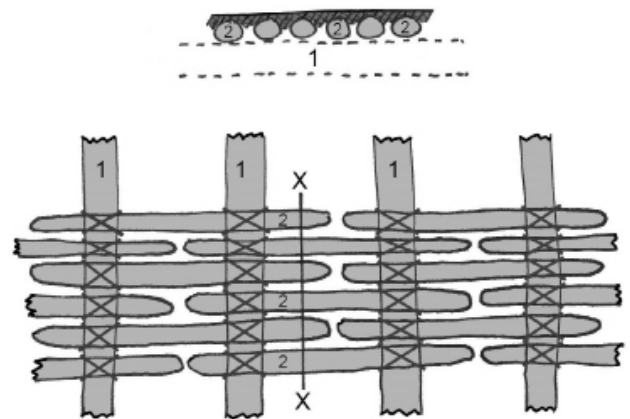


Figure 3. Plan showing the main ribs (1) and cross supports (2) of the floor of the Ark. X—X is the line of the cross-section shown above. Medium grey = wood; dark grey (hatched) = bitumen.

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tree logs with palm rope, it is inevitable that significant gaps would have occurred between the logs that represent the “supports.” These gaps result from the space taken up by the lashings, as well as by the expected irregularity of the logs. If the gaps were 2 inches on average, then based on the size and number of supports specified in the Ark Tablet, the resulting deck area would be 32,400 square feet, exactly as specified.

Significance of Bitumen in the Construction of the Ark

A raft made from two layers of logs, laid perpendicularly, was previously proposed by Dickin to explain how an ark with the size of a Sumerian acre could have been constructed in the Neolithic period.⁴⁵ However, the Ark Tablet describes the second layer of logs as “supports” rather than planking. This implies that the second layer of logs was intended to support the deck of the ark, rather than being left unfinished. And indeed, such an unfinished surface would have been largely unusable for animals, since their hooves would have become stuck in the gaps between the logs.

For a modern raft, the floor supports would normally be covered with planking or small spars to

make a smooth platform. For example, the Kon-Tiki balsa-wood raft was decked with bamboo spars, covered with matting.⁴⁶ However, bamboo is not native to Mesopotamia,⁴⁷ and it would not have been possible to cut wooden planks in the Neolithic period with stone tools. Nevertheless, boat-building practices observed in nineteenth-century Mesopotamia show that an alternative approach was possible (fig. 4). This involved making a platform of rough logs, caulking it with reeds and palm-fiber, and then impregnating the whole structure with molten bitumen. This crude but effective method of boat-building was quoted by Finkel from an eye-witness report by Lt. Col. Chesney:

A remarkable kind of boat is constructed at Tekrit and in the marshes of Lamlum, but more commonly near the bituminous fountains of Hit. At these places the operation of boat building is an everyday occurrence, and extremely simple ...

The first step in this primitive mode of shipbuilding is to choose a level piece of ground of suitable size, and sufficiently near the edge of the water; on this the builders trace out the size of the vessel's bottom, not with mathematical precision it is true, still a line is used, and a certain system followed, the floor or bottom of the boat being the first object. In the space marked out a number of rough

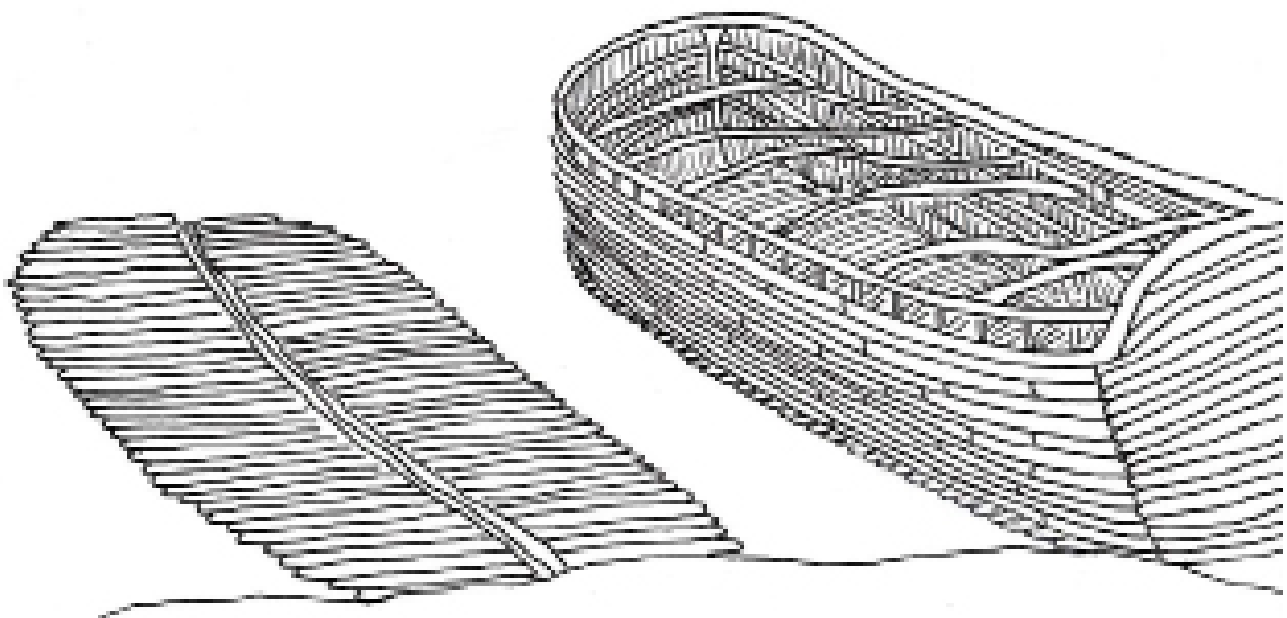


Figure 4. Two stages in the construction of a forty-foot-long boat from rough logs (before caulking), based on an 1888 photograph of an “ark shipyard” at Hit by John Peters in Irving Finkel, *The Ark before Noah: Decoding the Story of the Flood* (London, UK: Hachette, 2014), 152.

branches are placed in parallel lines, at about a foot distance; other branches are placed across them at similar distances, and interlaced. These, with the addition of a sort of basket-work of reeds and straw, to fill up the interstices, form a kind of rough platform ...

All parts are then coated with hot bitumen, which is melted in a hole close to the work, and reduced to a proper consistency with a mixture of sand and earth.⁴⁸

The importance of bitumen in the construction of the ark is demonstrated by its mention in all of the Akkadian accounts of the flood, in addition to the Genesis text. The Hebrew text uses the word *kopher*, translated in most English Bibles as “pitch” or occasionally “tar.” Tremper Longman III and John Walton suggest that *kopher* is a loan-word from Akkadian *kupru*, which refers to bitumen of the type that oozes naturally from the ground near Hit.⁴⁹ Since the Vulgate also uses the word “bitumine,” this seems more appropriate as an English translation of the Hebrew than “pitch.”

The other materials mentioned in building Noah’s ark (Gen. 6:14) may also be Akkadian loan-words. For example, “gopher” wood is unknown elsewhere in the Hebrew Bible. It is translated as “squared timber” in the Septuagint, but this appears to be another example of Greek cultural influence. Certainly, squared timber would have been impossible in the Neolithic period when the ark was probably built. A more likely explanation is that gopher is related to *kopher*, but here refers to pitch, in the sense of resinous wood.⁵⁰ Hence, the translation of Genesis 6:14 in the New Jerusalem Bible:

Make yourself an ark out of resinous wood.

Make it with reeds and caulk it with pitch inside and out.

The Hebrew word here translated “reeds” (*qinnim*) literally means “nests.” In other English versions it is generally translated as rooms, but there is no basis for describing the rooms or compartments of a wooden ship as “nests.” Therefore, many scholars now support the translation in the New Jerusalem Bible, assuming that the original Hebrew word intended was *qanim*, meaning reeds.⁵¹ This word is distinguished from *qinnim* only by its different pointing, and is another loan-word from Akkadian *qanuu* (reeds).⁵² Longman and Walton suggested that these reeds were used for caulking between the wood

and then covered with bitumen, as described in the Gilgamesh Epic.⁵³ However, they did not speculate about the overall shape of the resulting ark.

It has always been assumed that the function of the bitumen was simply for waterproofing. However, both the Ark Tablet and the Gilgamesh Epic describe enormous quantities of bitumen that seem excessive for waterproofing alone. In fact, the total amount of bitumen specified in both accounts is 9 *sar* (9 x 3600 *sutu*), which Finkel equates to 272 cubic meters (9600 cubic feet).⁵⁴ Dalley quotes one *sar* as 8,000 gallons, which is equivalent in volume, assuming American gallons.⁵⁵ Based on a deck area of 33,000 square feet, this implies an average thickness of about 3.5 inches of bitumen over the entire deck area of the Ark. However, since the bitumen was being poured onto a raft made of 10-inch logs, we can see that most of the bitumen would be used to impregnate the reed caulking between the logs. Therefore, the thickness of bitumen over the tops of the logs would only be a finger or so, as described in the Ark Tablet.

The result of this procedure was a composite material of enhanced strength and excellent buoyancy. In fact, such a platform has so much intrinsic buoyancy that when empty, a 45-foot long “ark-boat” of the type seen in figure 4 was reputed to have drawn only 6 inches.⁵⁶ This method of construction also explains the instruction in the Atrahasis Epic that the bitumen must be “strong,” to “give strength” to the ark.⁵⁷ We note that by mixing the bitumen with sand, a primitive asphalt could be created, which would have formed a durable surface for the flocks and herds of animals to be taken onto the ark. According to this design, the bitumen was not just waterproofing, but an integral part of the structure.

The Superstructure of the Ark

So far, we have seen how the crude yet effective shipbuilding process practiced at nineteenth-century Hit could be used to make a large and buoyant raft-like platform of whatever horizontal dimensions were required. But how does this correlate with the vertical size of the ark described in Genesis? The key point, based on our examination of the *Solano*, is that the reported height of the ark refers to its superstructure, not its hull. In fact, the ark had no need of a hull at all, because the animals could be accommodated on the platform made of bitumen-reinforced timber and reeds. In other words, the ark was scaled up

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horizontally from the design of the Hit barges, but not vertically.

A fence could have been added round the edge of the ark, by forcing vertical stakes into the horizontal mesh-work platform. For the "ark shipyard" described above, these stakes were turned into a "wattle" fence that was waterproofed with bitumen to form the hull. However, there would be little advantage in waterproofing the wattle walls of the original ark fence with bituminous "daub." By leaving the wattle open, this would allow spray or rain falling on the bitumen-covered platform to quickly drain away, allowing a relatively dry resting place for the animals. Such a design would have been aptly described, as in the Hebrew text, as an enormous basket.

In contrast to the stock animals, a dry shelter was required on the ark for human habitation and for the dry storage of food and animal fodder. Indeed, we could say that in many ways, the dry shelter *was* the ark (in the sense of the preserver of human life). And here, the introduction to the Ark Tablet makes it clear how this worked:

Dismantle the house, build a boat ...

In other words, the reed-walled hut through which the god of wisdom had whispered his instructions was to be torn down and rebuilt on the bitumen-reinforced platform. Such reed-built huts (called "mudhifs") are still built at the present day by the Marsh Arabs of southern Iraq, and an example of an interior is shown in figure 5. The structure consists of a framework of huge arches, each consisting of a large bundle of reeds that is also bound together with reeds. Typically, larger mudhifs also have four reed pillars at each end, creating an imposing entrance-way. These pillars can be over 30 feet high, with their lower ends buried in the soil. Therefore, if these pillars were pulled up and re-erected on the platform, they would create an ark around 40 feet high.

For a mudhif of the type seen in figure 5, the burial of the reed-pillars and arches in the ground clearly contributes to its overall rigidity. Therefore, when the reed hut was re-erected on the ark, additional reinforcement would have been necessary to compensate. This reinforcing was probably provided by three sets of horizontal reed bundles, attached to the main arches and pillars using reed hoops (fig. 6). Although modern mudhifs do not have this reed-hoop feature, it is an important component of the

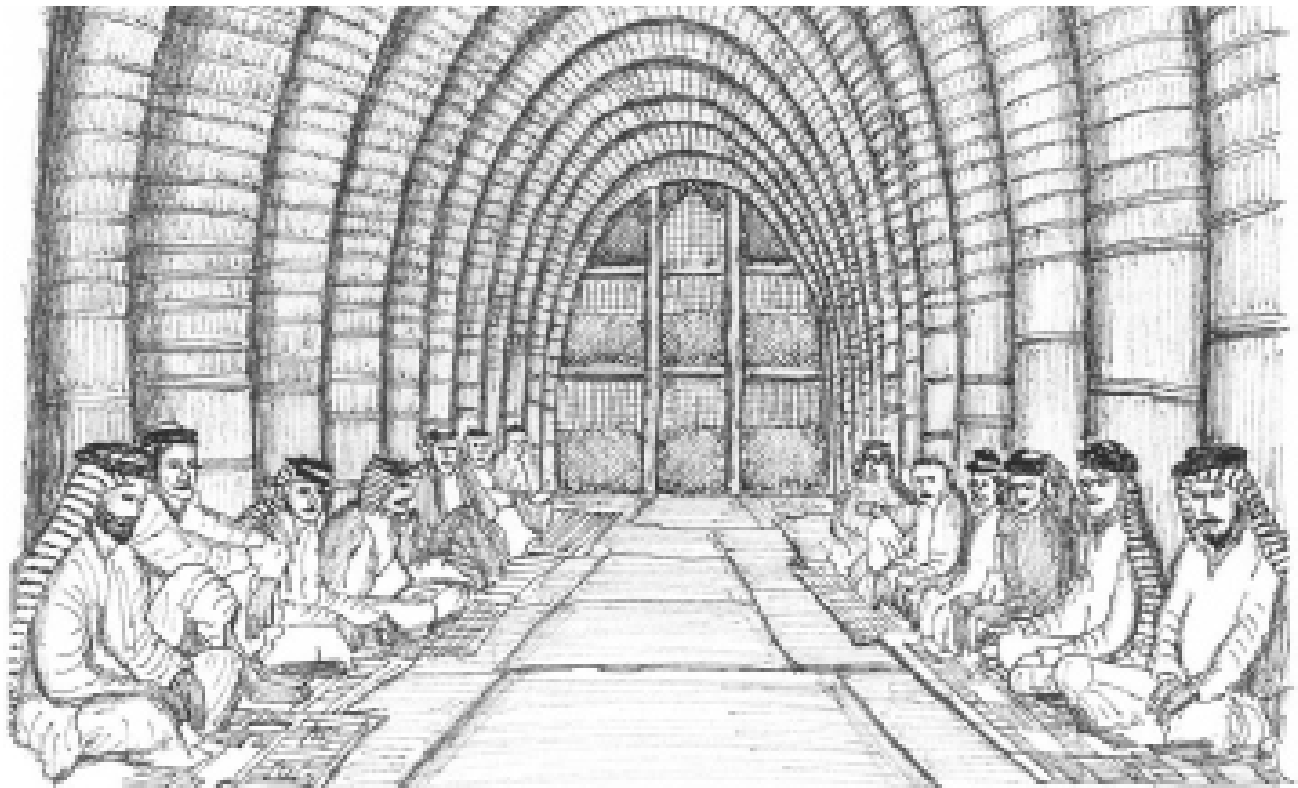


Figure 5. Typical view of the interior of a modern Marsh Arab mudhif.

reed huts that formed ancient sacred space, as seen in Sumerian cylinder seals and their impressions.⁵⁸ This reed-pillar iconography can be traced back to the reed hut sanctuary on the ark.⁵⁹

The key to making the reed hut an integral part of the ark's structure would have been the use of large quantities of bitumen as reinforcing for the reed-built framework and as waterproofing for its reed-mat covering. Both the Ark Tablet and the Bible speak of coating the ark with bitumen both inside and out. This has tended to give the impression of a hull that needed to be waterproofed, as interpreted by Finkel. However, by seeing the ark as a mudhif on a platform, we can now see that "inside" and "out" refer to inside and outside the mudhif.

The mudhif would also have needed a drainage system, so that any rain penetrating the structure could be removed, to keep the people, their food, and their animals' fodder dry. This drainage function is suggested by the detailed account of the ark's construction in the Gilgamesh Epic, which describes how the flood hero "Drove water pegs into her middle."⁶⁰ Finkel suggests that the same expression may be found on the reverse of the Ark Tablet, but it is badly damaged. He observed that other scholars have identified the "water pegs" as bilge plugs.⁶¹ These are normally removed to drain water leakage from the hull of a boat by beaching it at low tide. However, this procedure would be quite useless for the ark, which was never to be reused once

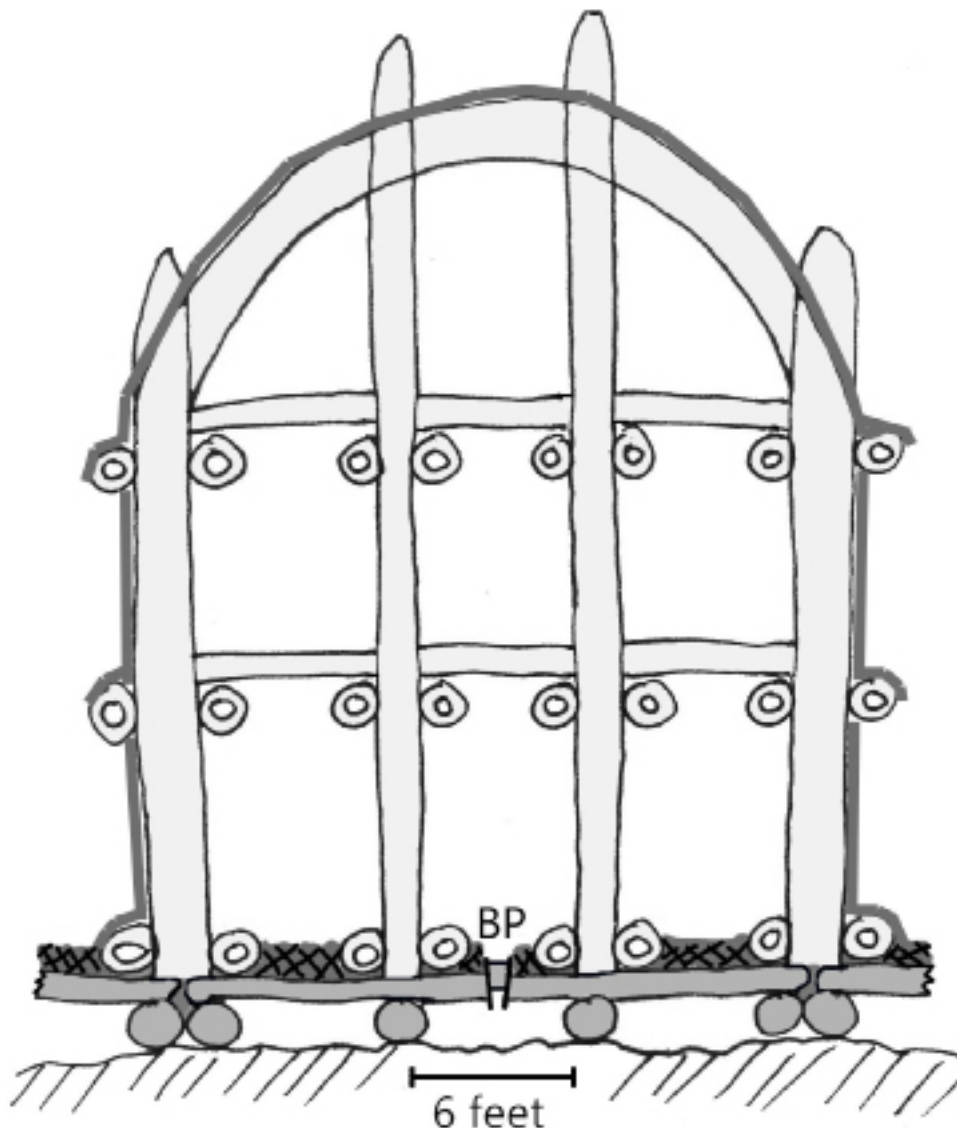


Figure 6. Schematic cross section of a reed hut re-erected on the ark platform. Vertical pillars support the end wall of the hut, whereas the reed-pillar arch supports the interior along its length. Pale grey = reeds; medium grey = wood; dark grey = bitumen; BP = bilge plug.

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it was beached after the flood. In fact, bilge plugs are the last thing that would be wanted for a hull-like ark, since their only effect would be to sink the ark if they ever leaked. On the other hand, drainage holes might be very useful for a raft-like ark with integral buoyancy. In case of any rainfall leakage into the superstructure of the ark, they would allow this water to be drained away.

Conclusions

Nothing is gained in understanding the lessons of faith if we adhere to an interpretation of Noah's ark that is intrinsically improbable. Therefore, we should seek interpretations of Genesis, enlightened by comparison with Mesopotamian sources, that would actually have been feasible to carry out in the ancient world. For example, the belief in Genesis that all peoples of the Middle East were descended from Noah implies a Neolithic flood, relatively soon after the Agricultural Revolution. This in turn implies that the ark was constructed using relatively primitive stone tools.

The epitome of good design of any structure is physical toughness and simplicity of construction. The new interpretation of the Ark Tablet proposed here would have used readily available materials to construct the ark with minimal processing. Indeed, the banks of the rivers have always been lined with a fringe of forest, due to "natural irrigation," even where rainfall alone is inadequate to support agriculture. In the nineteenth century, after millennia of deforestation and bitumen extraction, raw materials were still sufficiently plentiful to churn out "mini arks" in large numbers; therefore, we can surmise that in the ancient world, when large quantities of timber and bitumen would have been available at natural tar seeps near the Euphrates River, it should have been possible to build one large ark.

I conclude that the building of any kind of hulled ship in the Neolithic period would have been a near impossibility. In contrast, the bitumen-reinforced platform described here would easily have been scaled up to the size described in Genesis, and could indeed have been built in the late Neolithic period. ◀

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A monthly series of Zoom discussions for ASA members and their friends to think more deeply about an article or book review published in the ASA journal *Perspectives on Science and Christian Faith*. Moderated by Randy Isaac, the discussions are held on the second Saturday of every month at 2 pm Eastern time, <https://network.asa3.org/page/DivingDeeper>.

Call for Papers

Recognizing the Presence of a Person

James C. Peterson

Call for Papers

Jahi's mother refused to accept that her thirteen-year-old daughter was dead. Despite meeting the standard Harvard brain death criteria of no electrical activity in her brain, Jahi was transferred to a facility that was willing to feed her through a tube and maintain a respirator to oxygenate her blood. Her unconscious body could no longer be sustained after five years.

At the other end of life, the United States Supreme Court has agreed to rule on the *Dobbs v. Jackson Women's Health Organization* case (No. 19-1392) that many think will be the occasion to overturn the 1973 *Roe v. Wade* decision that declared abortion a constitutional right. If the court so rules, abortion laws will go back to each individual state: there has already been preemptive legislation in some states to protect abortion, and in others to largely ban it.

For the end and beginning of human life, and the time in between, the recognition of the presence of a fellow human being makes a difference in what we should do from in vitro fertilization to organ donation. The following essay describes a continuum of when and why human presence has been recognized over a lifespan. Which arguments make the most sense? Why? What are the important and unresolved questions and applications?

Readers are encouraged to take up one of the insights or questions in the following invitation essay, or maybe a related one that was not yet mentioned, and draft an article (typically about 5,000–8,000 words) that contributes to the conversation. These can be sent as an attachment to jpeterson@roanoke.edu. An abstract should be included in the text of the email. The best essays will go on to peer review and the potential for publication; if accepted, they will be published either in a *PSCF* theme issue, or as part of a *PSCF* variety issue.

The editorial in the December 2021 issue of *PSCF* outlines what the journal looks for in the articles we publish. For best consideration for inclusion in a theme issue, manuscripts should be received electronically before August 31, 2022.

Looking forward to learning from your contributions,

James C. Peterson, *Editor-in-Chief*

We should treat a human corpse with great respect, because it was associated with a person. Yet since it is not now a person, it can be buried or cremated, or separated completely into parts for autopsy, education, or organ transplantation. A corpse has a different moral status from that of a person.

If a dead human body is not a person, when *is* a human body a person? When and how do we recognize that a fellow human being is present at the end, center, or beginning of life? How people have answered this question varies greatly over time and place. This essay will line out the spectrum of how the moral status of persons has been perceived, in hope that readers will offer essays to *PSCF* that make a thoughtful case for where in this spectrum a person is present. Such recognition will then be an important consideration in an array of personal and

societal decisions including, for example, the practice of in vitro fertilization (IVF), prenatal genetic diagnosis (PGD), intrauterine birth control (IUD), abortion at various stages of development, brain death, organ donation, slavery, and genocide.

So, we will begin here with genocide, in which a whole people group is not recognized as fellow human beings, and then work our way step by step to earlier stages. Often the first example that comes to mind of the horror of genocide is the Nazi systematic killing of six million Jews, a million Roma, and millions of Russian prisoners of war. That genocide actually began with the medical establishment of Germany ending the life of the physically and mentally less fit in hospitals and custodial care institutions.¹ They deemed many persons of various ages to have lives not worth living. We do well to remember that genocide is not only a Nazi

problem. It is a human problem found on every continent. The Armenians in Turkey, the Tutsi in Rwanda, the urban dwellers wiped out by the Khmer Rouge in Cambodia, and the Rohingya in Myanmar are heartbreaking examples of persons of all ages not recognized or honored as fellow persons.

Also, slavery has been characteristic of almost every society in the human past. In slavery, people of every age are treated as property rather than as persons. This was stated explicitly by the US Supreme Court in the Dred Scott case decision (1857) that ruled that Dred Scott was not a person, rather mere property. Thankfully slavery has made the list as no longer acceptable in the *Universal Declaration of Human Rights* that was adopted without a no vote by the United Nations in 1948. Slavery is prohibited now by every country in the world, although there are still places and practices that are far too close to it.

We have significant global consensus now against genocide and slavery. The victims of these practices are persons who should not be treated in these ways. Continuing from persons of all ages to persons of specifically younger age, in the Roman Empire, babies were born on approval. The father could decide that a newborn was one more mouth too many to feed, or lacked promise for producing sufficiently for the family, or not the desired sex, and discard it.² The DeCamp Professor of Bioethics at Princeton University still advocates an approval process for whether an infant will be cared for to become a person, or not, and die.³

Others have recognized the presence of a fellow human being at first breath. Before a first breath what is in the womb can be terminated. After a first breath, there is a person who should be sustained and protected. Breath here seems to gain its import as a concrete manifestation of independence from the womb. At first breath, the baby can be supported by any number of willing people, and so can lay claim to such support without making a demand upon any one particular person. This distinction is of first importance if one focuses on the rights of the pregnant woman to control fully her own body. The argument may draw from the analogy that we do not require a person to donate an organ to someone else even if that other person will die without the transplanted organ. Our organs are uniquely our own, including one's womb, and cannot be demanded by

someone else. First breath is at the point of separation, so that from this perspective one can put aside that concern as no longer the sole determinant.

A related perspective is that of viability. To describe viability, it is necessary to use terms for the individual in the womb. To not assume one's discernment in this regard, this essay will use the word one, or individual, or fetus, which is Latin for offspring or child and yet is used freely by writers who do not deem the fetus a person. "Fetus" seems then a compromise term. In 1973 the United States Supreme Court overruled the abortion laws of 44 states by declaring that the US Constitution required honoring privacy in regard to abortion until the fetus was viable, able to live outside the womb at the sixth month of pregnancy. While the words "privacy" and "abortion" do not actually occur in the constitution, the ruling was that they are implied sufficiently by the text for the court to enforce them in this case. Sandra Day O'Connor, the first woman on the supreme court, observed that this ruling was on a collision course with itself.⁴ She said that viability is a measure of external technical support and will progress to earlier ages as techniques improve. So, if six months is currently encoded as law for when the state can intervene because of viability, assuming that this reasoning is correct, then the date for state interest will have to move earlier as support technology improves.

A further complication: if viability determines the personhood of the individual in the womb, then being a person depends and can change with the pregnant woman's location or finance. Say a pregnant woman is driving to the airport and is passing an excellent neonatal intensive care unit in the local hospital. If her fetus was in distress, she could access immediate care for it to survive, and, if it could survive, it would be viable and therefore a person. Once her plane is flying over the hospital, she might be only a few miles away from it but could not access immediate care and the individual in her womb would not be viable and hence not a person. Upon landing at her destination, as soon as she is back in quick reach of a hospital again, the one in her womb would be back to being a person. Viability is measuring external support as much as it is the fetus. An externally determined personhood could also be manifested in two women who have been pregnant for the same amount of time: one can afford the best

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medical care immediately and the other cannot. The fetus of the same age might then be a person in the affluent woman, and not a person in the financially poorer woman.

Around five months, there is enough of a brain to feel pain.⁵ If a foreign object enters the womb, the fetus will recoil away from it. This implies an ability to feel, or maybe even the beginning of minimal consciousness. At the other end of a lifetime, brain death is equated with the loss of life by the Harvard brain death criteria. If one has no EEG measured electrical activity in one's brain, one is deemed dead. Organ donation or autopsy can proceed. Symmetrically, some argue that if the absence of brain activity is a sure sign of the end of a human life, then the presence of brain activity indicates the start of one.

In pregnancy, just a month earlier, there is an experience recognized by some, that a fellow person is present in the womb. It is called quickening. Quickening often occurs around four months, when the pregnant woman feels independent movement. This has a powerful psychological effect. Something in her womb is moving when she has not directed it to do so. The fetus is inside her body and volitional, but it is not her. The hesitation with making this a standard for personhood is that it is measuring primarily the sensitivity of the pregnant woman. Some women feel this kind of movement quite early in pregnancy "like butterflies." Others never do—right up to birth. If one is shipwrecked on a tropical island, one does not cease to be a person simply because no one knows one is there; so, while a powerful experience, quickening might not be a regular guide to when a person is first present in the womb.

In the same vein as brain activity at the end and start of life, some argue that if a permanently stopped heartbeat is a sure sign of death, then the beginning of a heartbeat is the mark that a new human life and person has begun. Heartbeat is monitorable about six weeks into pregnancy.

This may also be roughly the mark for formation.⁶ The argument from formation is that one does not have an ensouled body until there is a body to ensoul. Whether a soul is a developing phenomenon or a separate entity assigned as a whole to a developing human, when the rudiments of a full body are present in primitive miniature, a soul is present, hence a person. Throughout the early and medieval church,

the longstanding consensus among theologians was that either God created a soul at the point when a body had formed in the womb, or, from the perspective of traducianism, a soul inherited from one's parents develops with the body and is at last completely present when a body has formed. Both soul creation and traducianism reasoned that one needed a body to have a soul, whether the soul is assigned or emergent. In short, there is not a fully ensouled body until there is enough of a body to ensoul. Before a body was present, the life developing in the womb was described as "unformed." This distinction between unformed and formed was used specifically by early church theologians including Tertullian, Lactantius, Jerome, Augustine (in the *Enchiridion*), Cyril of Alexandria, Theodoret, and the most influential shaper of Roman Catholic doctrine, Thomas Aquinas.⁷

Theologians saw allusions to this distinction between unformed and formed in three scriptural texts. One reference was clearest in the language chosen by the Septuagint. The Septuagint was the widely used Greek translation of the Hebrew Bible that was the primary Bible for the early Christian church. Its translation of Exodus 21:22–23 makes this distinction. There is a monetary penalty for ending unformed life, but if formed life is killed, the death penalty is required, life for life. Second, in the Hebrew language scripture, human beings are often called "nephesh," an animated body. Can one be an animated body, without a body to animate? Granted one still has a body after a leg amputation or the removal of a cancerous kidney, but having a substantial body of some sort is basic to being a human being in this world. Third, in Job 10:10–11, Job prays, "Did you not pour me out like milk and curdle me like cheese, then clothe me with skin and flesh and knit me together with bones and sinews?" This was read as a description of life beginning with an unformed state and then later developing to a formed one. By this distinction between unformed and formed, not yet having a body and having a body, miscarriage or abortion before formation was seen as loss of what was becoming a body. Miscarriage or abortion after formation was the tragic loss of a present body and person.

For Islam, when a person is present is a matter of revelation. The Qur'an states directly that a person is not present until sometime after the presence of

bones covered with flesh. This was pegged at forty days.⁸ Orthodox Jews affirm the same forty-day mark after fertilization. Before then, the developing life in the womb has a status “like water.”⁹ They read texts such as Psalm 139:13, “You knit me together in my mother’s womb,” as a description of God’s close involvement in the psalmist’s life from the beginning. However, the psalm does not say when what is developing in the womb becomes a person. God is intimately involved in the formation of the body that will be the psalmist, but this verse does not tell us when the developing body *is* the psalmist. Trying indirectly to extrapolate the timing of the presence of a person from this text is reading in affirmations that are not in context, the point of the text.

The next often cited line of demarcation is implantation. Implantation occurs six to nine days after fertilization. At this point the fertilized egg embeds in the womb where it will grow until birth. Only about a third of fertilized eggs successfully make this step,¹⁰ and for women in their forties, probably ninety percent of embryos do not implant,¹¹ so if there is a human being present before implantation, two-thirds of the people God has created were never born. Now it could be said that infant mortality has been that high at some times and places of human history, and that infants are no less persons as a result. But if a person is present from conception, it seems then that God’s design for human beings is that a majority will never experience life on Earth. Of course, God could choose to do this, but it seems contrary to what has been revealed as God’s plan for human beings, to first meet God here.

Ronald Green raises the further note that if we are convinced that two thirds of humanity is being lost in the days before implantation, should not the greatest share of federal research money and all other available resources be devoted to saving them?¹² If two thirds of all the people who have ever been, are lost in those first days, that is a far greater loss of life than to cancer, AIDS, or other diseases that currently attract our greatest efforts.

Others have settled on fourteen days as the point at which a person is present, because only then is it clearly settled how many persons will occur in this developing pregnancy. Through day thirteen, an embryo may split and form identical twins, or two embryos may merge to form one mosaic embryo. If

the number of persons is not settled yet, then there is not a person yet present. The usual counter argument is that God could assign an extra soul to a single embryo, knowing ahead that it will split, or no soul to an embryo that will be absorbed into another. Norman Ford responds that a better description would be that instead of viewing development in the first two weeks after fertilization as development of a human individual ... the process ought to be seen as one of development *into* a human individual.¹³

Yet others focus on four days after fertilization. In this journal, Bruce McCallum proposed that the first chapter of Luke is already “absolutely clear” in verse 43 about a person being fully present at that point.¹⁴ For McCallum, because Elizabeth calls Mary “the Mother of my Lord” four days after the annunciation, Jesus must have been fully present; hence, all embryos are fully present persons. Actually, there is no statement in this text that Mary is pregnant at that moment. Now Elizabeth does use the phrase “the Mother of my Lord” (a confirmation undoubtedly much to Mary’s encouragement), but that title does not tell us that the Holy Spirit had already created the start of the life that would be Jesus or that the Second Person of the Trinity was already incarnate inside Mary. God’s promises are so sure that they are often stated in the Bible as if already accomplished before they chronologically take place. For example, God directed Abram to be called always “Abraham,” which means “the father of multitudes,” on the basis of God’s trustworthy promise a year before he and Sarah had even one promised child, let alone a multitude (Gen. 17:5, 21). A biblical title can mean that a referenced event is sure to happen, not necessarily that it already has happened.

Some look to syngamy, because at that time the genetic material of a unique individual (unless an identical twin is also formed) is united in one nucleus of the fertilized embryo.¹⁵ This is completed about twenty-four hours after fertilization. Granted, skin cells that are genetically unique (unless there is an identical twin), and alive, and human, are not persons. Sometimes it is said that they are not persons because they lack the context and programming to develop into a baby, but actually they do have the necessary genetic instructions onboard. As to a signaling and nurturing environment, that could be provided intentionally to form a pluripotent embryo. Is there then an obligation to gather and save all

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sloughed-off skin cells with such potential? The billions of people possible would all be delayed identical twins, often called clones.

And is potential the same as actual? An acorn is of the oak genus, but is it already an oak tree because it has that potential? Is something that has the potential to grow into a born baby, already at the status of a born baby? If the lab has caught fire, do you save the test tube rack with twenty human embryos entrusted to your care by prospective parents, or the one newborn baby that a coworker left with you during lunch?¹⁶

Now there is an involved metaphysical argument that a human being is fully present as an embryo and only unfolds that presence over time, but this ignores the required and formative role of the environment in the womb and beyond. Genes do not determine all the physical characteristics of an individual, let alone who the person will be as a person. A set of genes does not a person make. Think of identical twins with identical genes who have different finger prints and become and remain unique persons. One can become a carpenter and the other an attorney, one a Buddhist and the other a Christian. Further, even if a genetic start guaranteed a later outcome, which it does not, that does not mean what is present should be treated as what it will be. All readers of this article can expect to someday be corpses, but that does not mean that we should be treated as corpses now.

Others argue for fertilization as the point at which a full human person is present, because, while not yet united in the nucleus, at least all of the genes of a unique individual are in one cell. Jeremiah 1:5 is often quoted here, "Before I formed you in the womb I knew you." But if this is a description of Jeremiah's existence, it refers to *before* he was in the womb. Human preexistence is not the point any more than for Ephesians 1:4 which states that "God chose us in him before the creation of the world." The texts are marveling at God's foreknowledge and choice, not human existence before time. God knows what is in even the secret place of the womb (Job 31:15). God knows all there is to know. Embryos are in God's presence as is all the rest of life. We are responsible for how we treat embryos, but when precisely they become persons is not taught in these texts.

The Roman Catholic tradition, in particular, goes even earlier than the starting points described so far. The unitive act of sexual intimacy must always be open to beginning a new person. This explains why barrier contraception is unacceptable to that tradition. Sexual intimacy must always welcome any person who might begin at that point. If the argument is correct, that maximum support for possible human life is always required, then forbidding any interference in procreation is more consistent than allowing contraception to interrupt a God-designed continuum of marital intimacy to birth. As a sole standard, maximum support of the possibility of human life leads to complete openness to procreation, not starting to protect only at the point of conception.

It should be noted that recognizing a person at any of these particular points is not suggesting that human beings can be more or less human according to their mastery of certain capabilities, as if being a human being was a degreed property. That would leave people with various disabilities vulnerable to being declared nonhuman, and we are all, at best, only temporarily able bodied. The lines described above are each proposed as thresholds. Once the threshold is crossed, a human being is present whether attaining an ideal or not.

Questions are often raised about how to weigh likelihood, doubt, risk, and burden of proof. Such is not unique to the above challenges. When a parent drives a child to school, that parent is risking the child's life. Thankfully it is a small risk, but an accident along the way is a real possibility. If one had an obligation never to risk harm, one would have to stay home. However, home is where most accidents happen. There are no risk-free choices. A standard of do nothing unless one has absolute surety that no one will be harmed, is not livable.

When we recognize that a fellow person is present, the person—as a person—should be treasured, nurtured, and protected. This may not be the only consideration, but such would affect what we should do.

Your thoughtful, well-informed analysis, to help all work through this challenge and its implications, will be most welcome. ◀

Notes

- ¹Doris L. Bergen, *War and Genocide: A Concise History of the Holocaust* (Lanham, MD: Rowman and Littlefield, 2003), 126–29.
- ²Charles C. Camosy, *Too Expensive to Treat? Finitude, Tragedy, and the Neonatal ICU* (Grand Rapids, MI: Eerdmans, 2010), 18–20; and W. V. Harris, “Child-Exposure in the Roman Empire,” *Journal of Roman Studies* 84 (1994): 1–22, <http://dx.doi.org/10.2307/300867>.
- ³Peter Singer, *Practical Ethics*, 2nd ed. (Cambridge, UK: Cambridge University Press, 1993), 191–213, and —, *Rethinking Life & Death: The Collapse of Our Traditional Ethics* (New York: St. Martin’s Griffin, 1994).
- ⁴Richard F. Duncan, “Justice O’Connor, the Constitution, and the Trimester Approach to Abortion: A Liberty on a Collision Course with Itself,” *The Catholic Lawyer* 29, no. 3 (1984): 275.
- ⁵Stuart W. G. Derbyshire and John C. Bockmann, “Reconsidering Fetal Pain,” *Journal of Medical Ethics* 46, no. 1 (2020): 3–6, <http://dx.doi.org/10.1136/medethics-2019-105701>.
- ⁶Some of the descriptions and arguments that follow were first broached by this author in an earlier article for *PSCF*. James C. Peterson, “The Ethics of the ANT Proposal to Obtain Embryonic-Type Stem Cells,” *Perspectives on Science and Christian Faith* 58, no. 4 (2006): 294–302, <https://www.asa3.org/ASA/PSCF/2006/PSCF12-06Peterson.pdf>.
- ⁷John R. Connery, *Abortion: The Development of the Roman Catholic Perspective* (Chicago, IL: Loyola University Press, 1977), 40, 50–52, 56.
- ⁸*Qur’an* 24:12–14.
- ⁹Laurie Zoloth, “The Ethics of the Eighth Day: Jewish Bioethics and Research on Human Embryonic Stem Cells,” in *The Human Embryonic Stem Cell Debate: Science, Ethics,*

and Public Policy, ed. Suzanne Holland, Karen Lebacqz, and Laurie Zoloth (Cambridge, MA: The MIT Press, 2001), 95–112.

¹⁰See, for example, N.S. Macklon, J.P.M. Geraedts, and B. C.J.M. Fauser, “Conception to Ongoing Pregnancy: The ‘Black Box’ of Early Pregnancy Loss,” *Human Reproduction Update* 8, no. 4 (2002): 333–43, <https://doi.org/10.1093/humupd/8.4.333>.

¹¹R. John Elford and D. Gareth Jones, eds., *A Tangled Web: Medicine and Theology in Dialogue* (Oxford, UK: Peter Lang, 2008), 151.

¹²Ronald M. Green, “Stem Cell Research: A Target Article Collection Part III—Determining Moral Status,” *The American Journal of Bioethics* 2, no. 1 (2002): 26, <https://doi.org/10.1162/152651602317267790>.

¹³Norman M. Ford, *When Did I Begin? Conception of the Human Individual in History, Philosophy and Science* (Cambridge, UK: Cambridge University Press, 1988), 181.

¹⁴Bruce McCallum, “Are the Products of ANT and SCNT Equivalent? A Response to Peterson,” *PSCF* 59, no. 1 (2007): 87, <https://www.asa3.org/ASA/PSCF/2007/PSCF3-07McCallum.pdf>.

¹⁵*God and the Embryo: Religious Voices on Stem Cells and Cloning* (Washington, DC: Georgetown University Press, 2003), ed. Brent Waters and Ronald Cole-Turner, is a thoughtful collection of essays on the moral status of embryos. My own chapter in the book includes a number of arguments also addressed in this call for papers.

¹⁶This thought experiment is paralleled in work by George Annas, cited by Bonnie Steinbock in *Life Before Birth: The Moral and Legal Status of Embryos and Fetuses* (New York: Oxford University Press, 1992), 215.



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**WHAT IS A HUMAN?
Flourishing as a Person**



Book Reviews



EVOLUTIONARY SCIENCE

THINKING ABOUT EVOLUTION: 25 Questions Christians Want Answered by Anjeanette Roberts, Fazale Rana, Sue Dykes, and Mark Perez. Covina, CA: Reasons to Believe Press, 2020. 343 pages, index. Paperback; \$21.95. ISBN: 9781886653979.

As I accompanied a family member to a recent medical appointment, a nurse noticed I was reading a book on evolution, whereupon she immediately proclaimed that she did not believe such “fake news.” When politely and gently asked to explain why she felt that way, she admitted she did not really know anything about evolution, but remained sure it was both wrong and dangerous. As an evolutionary biologist, I have, sadly, come to expect such interactions, which crystallize the urgent need for, yet at the same time the primary problem with, this dense, detail-packed book written by four diverse scholars.

Many bright, curious people like this nurse have heard little reliable information (and perhaps much misinformation) about evolution; many are people of strong faith, who understandably wish to avoid books written by scientists displaying outright hostility toward believers. The authors of *Thinking about Evolution* direct their writing to believers, but I expect most readers will not come away with a clearer grasp of what modern science says, and does not say, about evolution.

With 25 chapters covering a broad selection of topics from molecular genetics to archaeology, this book has lofty aims that are occasionally but not uniformly fulfilled. I found myself nodding in agreement almost as much as I vigorously shook my head in dissent or stunned disbelief, and I presume the book will likewise prove equally enjoyable yet frustrating to most readers. There is much to admire here, from the focus on evidence and the authors’ humble admission that they may be wrong (they pledge to “follow the evidence wherever it leads”). The commendably wide array of topics befittingly emphasizes philosophy, and the authors wisely stress not just scientific findings but the importance of defining terms, abductive reasoning, and rhetorical language in the acceptance or rejection of evolution.

The authors are candidly up front about “outing our bias” as progressive/old-earth creationists: the fundamental standpoint of Reason to Believe (RTB). According to this scheme, “material stuff in the universe” was created either directly via divine fiat,

or, as in the case of “galaxies, stars, and planetary systems,” through “secondary causal events [via] physical laws established in the initial creation.” RTB’s position limits the role of “secondary” unfolding on living systems. Throughout the book, the authors emphasize that they oppose, and sharply criticize, theistic evolution/evolutionary creation (TE/EC).

Scores of references and helpful figures reflect thorough research, with 25 chapters posed as questions, some highly specific (Did Neanderthals create art?), others weakly generic (What’s philosophy got to do with evolution?). Authors display familiarity and in many respects mastery of material, but they seldom do justice to all topics or fairly represent science; their prejudice shows in such statements as an “evolutionary view ... encourages many injustices and social ills we see in our world today.”

Chapters on molecular genetics and biochemistry (by Roberts and Rana, respectively) are remarkably comprehensive and fact-filled, perhaps too much so, given that the depth of detail (on epigenetics, horizontal gene transfer, tandem repeats) will likely overwhelm casual readers. Chapters on macroevolution and paleontology are much weaker and less objective, betraying strong biases and employing stale creationist tropes about “irreducible complexity” and indemonstrable phenomena. There is notable fretting, demonstrating infuriating lack of understanding, about “large-scale” evolution, as authors insistently hawk weak claims about progressive stages and driving forces of evolution. Notions equating evolution with progress are common outside science but demonstrate startling ignorance of scientific consensus, as do ideas about Platonic essentialism and straight-line advancement. There are many false claims about a supposed lack of transitional forms, plus confusion about what might constitute a transitional form: in short, every species! By analogy, we all agree that children descend from, and sometimes closely resemble, their parents, but where are the transitional intermediates?!

The authors seem not to have considered the basic, widely accepted view of biodiversity as bush-like rather than ladder-like, nor that many diverse species of hominins, early tetrapods, and early whales existed concurrently, or that some species persisted as new ones appeared. As George Williams pointed out, there are good reasons why many ancient plant and animal descriptions still apply. Millennia are a mere drop in the bucket of geological deep time

(admittedly incomprehensible on a human scale); second, natural selection generally culls outliers and preserves the status quo, at least in the absence of environmental change. This explains an apparent stasis of many species, and cladogenic speciation explains why older species can persist over long spans even as new species arise.

As is often the case with evolution critiques, some criticisms hit the mark. I daresay crucial points could chasten agnostic or even atheistic scientists. Expert educators will enjoy the trove of technical details. Discussion of whether biochemical data are analog or digital is fascinating, but the obsession with life's origins (not strictly a topic of evolution) is tiring. Yes, evo-devo is still in its infancy, but it readily explains how tiny molecular tweaks produce huge phenotypic changes, and how convergence is predictable.

More troubling than any answers the authors provide are obvious questions they omit, including key queries at the heart of current evolutionary exploration, including rates and levels of evolution. What is a species? Can we recognize them over time? How rapidly does evolution occur? What about group selection?

The authors admit evolution is a paradigm consistent with countless observations, yet send mixed signals concerning its reliability. They affirm microevolution as factual while seemingly disavowing that science has facts. They provide a solid primer on philosophy and the nature of science, but fail to recognize key distinctions between methodological and ontological naturalism. They explain that falsification is a key to science, yet fail to show how simple findings could falsify evolution (organisms with non-nucleic acid genetic codes, problematic chronology, discordance of genes and phenotype). We "learn" that Neanderthals were nothing like modern humans and they could not have created art, which apparently would threaten human uniqueness, even though dozens of previous claims of exceptionality (e.g., humans as sole tool makers or users) have quietly disappeared without consequence.

I found much to like in this volume, but it is perhaps fitting that my feelings were ultimately mixed. The alternately detailed and vague explanations, and blend of modern and stunningly out-of-date findings, contribute to an overall feeling of mixed messaging, as do specific claims made throughout the book. The authors frequently argue that evolution is not goal-driven, then (in other passages) state that evolution must have a driving purpose. Their

treatment of macroevolution reveals a strong teleological bias, despite a notably good section on why science avoids teleology. In places, there appears to be a steadfast denial of any role for evolution in generating biodiversity; nonetheless, there are occasional bold statements such as "Does microbial evolution occur? You bet it does!" Together, these contribute to an uneven hodgepodge of chapters and eventually to an unbalanced if unsurprising assortment of conclusions (microevolution good, macroevolution impossible).

The upshot is that it is ultimately difficult to know just whom the book is pitched at. It is hard to imagine the target audience, except perhaps for the nurse I encountered: smart, literate, curious people who (I imagine cynically) seek scientific "reasons" to validate their gut rejection of evolution. The authors appear to give the game away a quarter of the way through the book: "Does evolution stand as a threat to Christianity? It depends on your beliefs." Truer words were never written, and that admission distills the main issue, and shortcoming, of this jam-packed tome, stuffed with an array of overpowering detail that nonetheless seems aimed at minds already made up. If you are unlikely or unwilling to accept the truth of evolution, as is occasionally the case for devout followers of any religious faith, then no amount of scientific elaboration will change your mind. Conversely, if you are comfortable with evolution, then you might (as I did) find much to ponder here but little to alter your view.

Sadly, the book readily exhibits typical creationist flaws. Given their scientific training, it is unfortunate that the authors do not accept (or at least admit) that science is a work in progress which does not claim to hold immediate answers to all current questions, or that disagreements among scholars and revised ideas based on new evidence demonstrate healthy potential. I applaud the authors' bluntly stated insistence on approaching this fraught topic with open minds—a refreshing and truly admirable admission, although, I regrettably fear, not an honest one. The authors are welcome to embrace creationism, but I worry that it precludes them from giving evolution an honest accounting. Readers will have to judge if the authors present a good faith effort to accurately reflect modern science, or if their preconceptions limit their judgment of current evolutionary thinking. Alas, I vote for the latter.

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Book Reviews



ENVIRONMENT

SCORCHED EARTH: Environmental Warfare as a Crime against Humanity and Nature by Emmanuel Kreike. Princeton, NJ: Princeton University Press, 2021. 538 pages. Hardcover; \$39.95. ISBN: 9780691137421.

In *The Abolition of Man*, C. S. Lewis writes, “What we call Man’s power over Nature turns out to be a power exercised by some men over other men with Nature as its instrument.”¹ Lewis wrote this decades before the fields of environmental history and political ecology became popular; these topics now challenge our tendency to conceptualize nature and culture in dualistic or binary terms, but he understood that it is impossible to separate power over nature from societal power.

In *Scorched Earth: Environmental Warfare as a Crime against Humanity and Nature*, Emmanuel Kreike shows that nature is always an instrument and a victim of war. He argues that scholars conceptualize war as an act of genocide (the intentional effort to destroy a whole nation or ethnic group) or ecocide (the destruction of an ecosystem or species). But this dualistic frame misses the complex reality of warfare that often amounts to what he calls environicide: “intentionally or unintentionally damaging, destroying, or rendering inaccessible environmental infrastructure through violence” (p. 3).

The temporal and spatial scope of *Scorched Earth* is impressive. Temporally, Kreike begins with the early sixteenth-century Dutch Revolt and ends with the First World War. Spatially, he ranges from conflict in the Low Countries of Europe to Spanish conquest of the Americas. Throughout, he shows that, in Western warfare, parties have consistently targeted environmental infrastructure, leading to lasting impacts on both societal and ecological patterns.

Chapters 1 and 2 recount the Dutch Revolt and the Spanish Conquest of America, both in the sixteenth century. Chapters 3 and 4 tell the stories of the Thirty Years War and European conquest of America in the seventeenth century. Chapters 5, 6, and 7 outline the War of the Spanish Succession, the War of the Austrian Succession, and European colonialism in the eighteenth century, when the principles of limited war were adopted by many European nations. Chapters 8 and 9 explain American westward expansion and Dutch conquest of Indonesia in the nineteenth century. Finally, chapter 10 shows that Portuguese colonial conquest and the First World War continued environcidal practices.

Scorched Earth makes several important contributions. Like other environmental histories of warfare, *Scorched Earth* shows the horrors of war for both people and the nonhuman environment. But the sweep of *Scorched Earth* offers something new. Kreike shows that warring parties have consistently destroyed environmental infrastructure—fields, homes, dams, houses, irrigation networks—in order to sustain themselves and to starve their opponents of critical resources or terrorize their opponents into submission. This altered both social/economic practices and ecological processes, often leading to migration, famine, disease, and depopulation. Often attributed to forces of nature, these tragedies are shown by Kreike to be more accurately attributed to environicide.

The sweep of Kreike’s analysis also shows the vast gap between the rules of war and the practice of war. Beginning in the eighteenth century, armies adopted strict rules prohibiting rape, looting, and violence against civilians. Repeatedly, these practices continued. *Scorched Earth* expands our understanding of war’s collateral damage by emphasizing the destruction of environmental infrastructure alongside more-direct human atrocities.

The sweep of the book does create some challenges. For example, in some chapters, Kreike’s detailed accounts demonstrate his argument convincingly. In other chapters, readers must trust his analysis through impressionistic accounts. But taken together, the ten chapters make a compelling case.

The more significant question in *Scorched Earth* is the value of the term “environicide.” Kreike uses it in part to challenge the notion that “total war,” namely, war in which “anything and everything is the object, subject, and means of war” (p. 17), is exclusively a modern phenomenon or dependent on weapons of mass destruction. In this, he certainly succeeds. But in parts of the book, then, environicide is essentially a synonym for total war:

Environcidal war was total war that triggered famine, disease epidemics, massive population displacement, and the devastation of people’s livelihoods and ways of life and was as destructive to humanity as it was to Nature. The history of total war as environicide highlights ... [why it] should be condemned as a crime against humanity and Nature. (p. 417)

This is a valuable insight that helps us understand how destructive warfare is of both humans and non-human nature.

Yet he also introduces the term to mean something broader than total war, namely that warfare with limiting rules of engagement still destroys environmental infrastructure that people need to rebuild after a conflict. Using it this way suggests something so broad that it is difficult to imagine any warfare that does not constitute what he describes as “a crime against humanity *and* nature.” To the extent that international law does not treat all warfare as criminal, environicide clearly needs boundaries.

But the problems highlighted above are minor in evaluating *Scorched Earth*. It is a remarkable work of scholarship that should make its way into every graduate course on the history of military conflict.

The book has enormous value in thinking critically about contemporary warfare. All United Nations member states are signatories to the Geneva Conventions, which are intended to protect civilians, other noncombatants, and prisoners of war. If followed, the conventions would ensure that signatory nations do not carpet bomb cities as the United States did in the Second World War, deploy the kind of chemical weapons used in the First World War, and summarily execute prisoners. Appealing to these conventions lets civilian and military leaders tell their citizens that they engage in limited war with minimal collateral damage. Kreike’s analysis should make us question the meaning of limited war which invariably causes direct human collateral damage and indirect human collateral damage caused by the destruction of environmental infrastructure. Indeed, *Scorched Earth* demonstrates that, however compelling just war theory might be in concept, fully just prosecution of war does not happen in practice.

The book also helps build the conceptual framework needed for Christian reflection on sustainability. Christian theologians and ethicists, particularly since Lynn White Jr.’s 1967 essay “The Historical Roots of Our Ecological Crisis,” have challenged dualistic thinking about humans and the nonhuman environment. Kreike’s descriptive analysis deepens our understanding of human embeddedness in the non-human creation, showing that Christian ethics itself should not be bifurcated in any simple sense between *social* ethics and *environmental* ethics.

Note

¹C. S. Lewis, *The Abolition of Man* (New York: HarperCollins, 2001), 55.

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HISTORY OF SCIENCE

GEOGRAPHIES OF KNOWLEDGE: Science, Scale, and Spatiality in the Nineteenth Century by Robert J. Mayhew and Charles W. J. Withers, eds. Baltimore, MD: Johns Hopkins University Press, 2020. 272 pages. Hardcover; \$54.95. ISBN: 9781421438542.

Around the 1970s, historians began embracing what came to be called the “constructionist” view of the development of scientific knowledge, which emphasized the particulars of local circumstances, people, and politics. On this view, scientific knowledge is thus constructed, not discovered. This process, moreover, is not the work of the individual genius but manifestly a communal and cooperative enterprise. The social construction of science thus denotes the view that scientific knowledge is not solely an autonomous, rational human production, but, rather, tangled directly to social interests and conditions. Influenced by the broader postmodern rejection of unmediated knowledge, the social constructivist relativization of scientific knowledge had direct implications for the way in which one defined the relationship between science and religion, in that it has forced scholars to stop privileging the scientific narratives of conflict with faith, and thus challenged prevailing grand narratives of scientific progress, most conspicuously promulgated by George Sarton, often considered the father of the discipline of the history of science.

Historian and sociologist of science Steven Shapin has been one of the leading practitioners of constructivist historiography. In now a celebrated article, Shapin argued that the early man of science “did not occupy a single distinct and coherent role in early modern culture.” Everywhere the social role of the man of science was heterogeneous, the pursuit of natural knowledge adventitiously attached in all sorts of ways to preexisting roles.

The notion that science and scientists are not isolated from their wider cultural context had enormous consequences. Critical theorists and sociologists of knowledge like Shapin offered a helpful corrective, revealing a kind of dialectic where science, literature, and culture are understood to borrow freely from each other. Focusing less on the structure than ethos of scientific communities in the early modern period, Shapin relativized and localized the central figures, themes, and institutions of the so-called scientific revolution. Shapin’s scholarship, and those who

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followed his lead, provide a useful background for the emergence of issues of the culture of knowledge in the nineteenth century. What is particularly unique about the nineteenth century is that direct access to knowledge, through popular, cheap, and readable texts, became a central factor in both the production of knowledge and the structuring of social order.

Shapin called historians of science to take up the task of providing a more “contextualized” historiography of the history of science. Since then, there has been much progress in putting science in its place. This “spatial turn,” if you will, in the history of science is paradigmatically reflected in the corpus of David N. Livingstone, which the current volume under review almost serves as a *Festschrift*. Early in his career Livingstone recognized that “science is not a disembodied entity; it is incarnated in human beings,” and that “science is not some eternal essence slowly taking form in history; rather it is a social practice earthed in concrete historical and geographical circumstances.” In his well-written small book, *Putting Science in Its Place: Geographies of Scientific Knowledge* (2003), Livingstone set out to evince scientific knowledge and practice as deeply embedded in specific times, places, and local cultures—science, in fact, is always “a view from somewhere.” Space matters, according to Livingstone. Space enables and constrains us; dictates what we can say and do; allows only a range of possible, permissible, and intelligible utterances and actions. This is Livingstone’s notable emphasis of “location and locution”: the positions we speak from are crucial to what can be spoken.

Scientific knowledge is thus not immune to the vicissitudes of culture. According to Livingstone, “What is known, how knowledge is obtained, and the ways warrant is secured are all intimately bound up with the venues of science.” Investigating the local, regional, and national features of science means that science is not to be thought of as some transcendent entity that bears no trace of the parochial or contingent. “We must work,” writes Livingstone, “with a less fixed conception of what science is.” What passes as science is contingent on time and place; it is persistently under negotiation. After all, science is a human enterprise: “it is not some preordained entity the fulfilling an a priori set of necessary and sufficient conditions for its existence; it is a human enterprise, situated in time and space.”

Science, then, is not just a collection of theories and universal truths but a concrete practice with spatial dimensions. It is, indeed, situated knowledge.

The editors of *Geographies of Knowledge* have gathered a collection of essays that build on themes in Livingstone’s impressive work. Structured in three parts, focusing on local, national, and global studies. Robert J. Mayhew and Yvonne Sherratt, for example, offer a “spatial hermeneutic” of Thomas Malthus’s *Essay on the Principle of Population*, arguing that it was a work grounded in “local knowledge,” with each edition revealing autobiographical particularities (p. 51). Diarmid A. Finnegan then revisits the place of Belfast in examining John Tyndall’s infamous “Belfast Address” of 1874. Although the address has attracted considerable scholarship, Finnegan insightfully brings out further nuance by emphasizing the “plurality of place,” exposing how religious and political changes in Belfast reflect the contrasting responses to his work (p. 79).

Turning to more national studies, American church historian Mark Noll examines Swiss defender of slavery Henry Hotze and how he used a rhetoric of conflict between science and religion to support scientific racism (p. 108). Veteran historian of science and religion Ronald Numbers reiterates his approach to the evolution debates in America, followed by yet another warning of the rise of global creationism (p. 132). Next comes Nicolaas Rupke’s “structuralist” method in analyzing the early “nationalization” of evolutionary theories, particularly in its Nazi appropriation (p. 150).

The concluding global section has an interesting piece by Charles Withers on the establishment of an internationally accepted Prime Meridian, in which he shows that the meetings of the International Geographical Congress “cannot be divorced from its wider intellectual and political context” (p. 178). This is followed by case studies on amateur naturalist and illustrator Charlotte Wheeler-Cuffe by Nuala Johnson, the situated nature of early climate science in the British Empire by Vinita Damodaran, and a study of failed British expeditions of West Africa by Dane Kennedy. An Afterword by John Agnew cogently summarizes the entire volume, illustrating in particular how Livingstone’s impressive scholarship reflects his own variegated background as an Irish Presbyterian, historical geographer of science extraordinaire!

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MEDICINE AND HEALTH

CALLED TO CARE: A Christian Vision for Nursing by Judith Allen Shelly, Arlene B. Miller, and Kimberly H. Fenstermacher. Downers Grove, IL: IVP Academic, 2021. 328 pages. Paperback; \$32.00. ISBN: 9781514000922.

The third edition of *Called to Care* details a rich biblical foundation and Christian worldview for nurses seeking to integrate their faith in nursing practice. Co-author Kimberly Fenstermacher joined Judith Shelly and Arlene Miller in this recent edition. The focus of the third edition remains similar to the last two, the authors detail a broad nursing metaparadigm and articulate the relationships between person, environment, health, and nursing practice.

I work at a Christian college in the Midwest and nursing faculty have adopted the second edition of *Called to Care* within the undergraduate Bachelor of Science in Nursing curriculum for several years. I was very excited to read the third edition of *Called to Care* to discover what is new in this edition. I believe that this book, as do the previous two editions, delivers a compelling biblical understanding for the nursing profession. The subtitle of the third edition changed to *A Christian Vision for Nursing* from *A Christian Worldview for Nursing*. As I read this book through a nursing lens, I felt a deep unwavering connection between Christian faith, scripture, and the everyday responsibilities, ethics, and expectations that are unique to the role of the nurse.

The authors explored new topics related to cultural competency, palliative care, and addressed recent changes within healthcare and the impact on the profession. Furthermore, the authors continue to help readers apply information in practical methods offered through revised and updated chapter objectives, theological reflective questions, and the use of case studies and discussion questions at the end of each chapter. These resources are easy to integrate within nursing curricula and equip nursing faculty and students to seek out holistic nursing care—caring not only for the physical needs of the patient, but also the mind, spirit, and soul.

Shelly, Miller, and Fenstermacher expand on culture in this new edition, providing nine meaningful guidelines to help nurses relate to their clients cross-culturally. These principles encourage self-reflection, lifelong learning and research, and a personal connection and relationship with God. Furthermore, the authors emphasized walking alongside Jesus in

preparation for the draining physical, emotional, and psychological toils of the nursing profession. How do nurses keep attending to the sick when they cannot see physical improvement in patients? Shelly, Miller, and Fenstermacher emphasize that only through Christ can nurses find realistic hope in the face of suffering and death. As the nursing profession struggles with high acuity patients, limited resources, compassion fatigue, and burnout, the authors encourage and remind readers that many nurses feel compelled to enter the profession to serve God and are willing to embrace suffering to fulfill this purpose. Additional reassurance is offered through examples of how nurses delight in and find joy through interpersonal relationships with patients and colleagues. Finally, another inspirational strength that Christian nurses should seek to demonstrate is the resilient ability to think broadly, considering progressive opportunities that can arise out of difficult situations. Christ-centered nurses embrace risks and courageously focus their efforts on change that can positively enhance the profession and better patient care despite a complex and ever-changing health care environment.

Shelly, Miller, and Fenstermacher casually discussed caring for individuals who identify as lesbian, gay, bisexual, transgender, or queer (LGBTQ). The authors suggest that nurses care for all people with respect, sensitivity, kindness, compassion, and understanding but leave no guidance for teaching this topic in Christian higher education. Nursing faculty are navigating difficult terrain as many are uncertain if they have the support of administration when speaking of these conflicting Biblical perspectives. Nursing faculty are required to teach on this topic as some students have already encountered and cared LGBTQ individuals in clinical practice. For example, a maternal newborn clinical rotation left students, faculty, and nursing staff in a puzzling situation. A student cared for a client who identified herself as male and just had a baby. This client requested that all healthcare staff refrain from identifying the newborn as male or female, as the client and partner felt that it was best for the baby to choose which sex they most closely identify with once he or she is older. While this was a perplexing situation for many faculty and students and there was little guidance from nursing staff on the unit. As this topic continues to filter into diversity initiatives, nurses must be equipped and confident to navigate controversial topics with a sound moral Christian foundation. A more substantive section on these issues would have been a helpful addition to this edition.

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This book has challenged me to critically evaluate how I integrate faith inside the classroom. Moreover, the authors have deeply moved and inspired me to grow intimately in my relationship with Christ. I highly recommend this book to nursing faculty, students, and to all nurses that have devoted their life to Christ and seek to be in constant relationship with Him. The message within this book softens calloused hearts and motivates nurses to view each client as created in the image of God.

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SCIENCE AND RELIGION

SCIENCE AND THE CHRISTIAN FAITH: A Guide for the Perplexed by Christopher C. Knight. Yonkers, NY: St. Vladimir's Seminary Press, 2020. 232 pages. Paperback; \$22.00. ISBN: 9780881416718.

Christopher Knight holds a PhD in astrophysics, serves as a priest of the Orthodox Church, and is a Senior Research Associate of the Institute for Orthodox Christian Studies in Cambridge, England. His two previous books also examined the relationship between science and Christian theology but were aimed at a broad academic theological audience. This book however is “aimed specifically at an Orthodox audience and focuses on the kinds of questions that I find are often asked in Orthodox circles” and “is aimed, not primarily at academics, but at the ordinary, intelligent believer whose formal education may have included neither science nor theology at an advanced level. For this reason, it does not attempt a comprehensive survey of the work of others engaged in what is sometimes called the science-theology dialogue” (p. 17). As he states in his Afterword, “My hope and prayer is that what I have written here may be a contribution to that development, both for the theological scholars of our Orthodox community and for the ordinary believer” (p. 226).

These facts on their own do not mean that the book cannot be of value for a non-Orthodox audience. I myself have learned a great deal from Patristic thinkers and have often used their ideas in my own apologetic work. Nonetheless, I do feel compelled to clarify two things for other readers. As the book is written for an Orthodox readership, it does presume a baseline understanding of Orthodox theology and history: the text is sprinkled profusely with the names of Orthodox thinkers and Orthodox theological/philosophical terms. More importantly, though, I found the title of this book (and its description on

Amazon) to be misleading. It is less about the relationship between science and the Christian faith in general, and more about how the Eastern Orthodox Church has navigated that relationship differently (and apparently in Knight's view, better) than the Western church. In effect, it is less a defense of Eastern Orthodox thinking before a Western audience, and more a critique of Western thinking before an Eastern audience. This perception became quite evident in the Afterword:

Throughout this book, I have been critical of the way in which the Western science-theology dialogue has developed over the past half-century ... We cannot ignore those questions [raised in the science-theology dialogue], nor can we ignore the answers that have been proposed by Western scholars, even when we judge them (as I do) to be inadequate or incomplete. (p. 223)

There is an element of pejorative in Knight's referring to the Western scholars as “our younger brothers” (p. 223). In fact, Knight seems to perceive intra-ecclesial conflict or competition in his view of the trajectory of the dialogue between faith and science over the past two millennia. After applauding the Orthodox church for maintaining engagement with science while the West dropped the ball during the first millennium, he acknowledges that the roles reversed during the second millennium. He details how world historical events (including the rise of the Ottoman Empire, Russian politics, and the French Revolution) caused Orthodox thinkers to distance from and become suspicious of secular science, while only the Roman Catholic Church in Italy continued the push to harmonize science and faith (pp. 42–44). Finally, he concludes his description of that trajectory with the following:

In the Western theological community, a rich 'science-theology dialogue' has existed for over half a century ... a comparable dialogue has only begun more recently in the Orthodox world. (p. 44)

... around the middle of the twentieth century our Orthodox theology – through the “neo-patristic” movement – finally escaped from its reliance on those Western Christian philosophical and theological frameworks which had, up to that period, strongly influenced our theological thinking for several centuries ... there can be no doubt that the scholars who led this attempt to escape our “Babylonian captivity” have performed an extremely important task. (p. 159)

So, how does Knight see Eastern thought doing a better job exploring faith, science, and the relationship

between the two than that in the West? Knight identifies several ways. First and foremost, the Orthodox community did not lose sight of science during the first millennium the way that the Western church did and had to rediscover science through the Muslim world (p. 38).

Second, Orthodox thinking is more influenced by the Patristic tradition of reading the scriptures allegorically and anagogically rather than “literally” as Western fundamentalists do (pp. 46, 61). The difference in outcomes between these two approaches is exceptionally evident when considering the creation story, and Knight claims that the questions being raised “in the Western science-theology dialogue can be answered more satisfactorily when explored through the Orthodox Tradition than it has been in the Western context,” in large part because the former has a such a rich and nuanced theology of creation (p. 51).

Third, in his chapter which explores the mind of the Patristic Fathers, Knight compares and contrasts approaching theology experientially and through mysticism (Eastern) rather than through reasoning and certainty (Western); the Eastern approach to theological and scientific knowledge through contemplation (*theōria*) of the intellect (*nous*) is superior to the Western approach of gaining knowledge (*gnōsis*) through reason (*dianoia*) (pp. 58–66). In several other places in the book, Knight refers to most Western thinkers as having a poor understanding of the *nous* or as seeing no value in the concept (p. 120).

Fourth, the Orthodox view of original sin is not the Augustinian one that has so influenced Western theology (in a footnote, he points particularly at Calvinism). One outcome of this is that the *imago Dei* has not been destroyed (Western) but distorted (Orthodox), and as such the capacity to know God at an intuitive level is not obliterated (Western) but only eclipsed (Orthodox) (pp. 56–66). Another outcome is an entirely different understanding of the first humans being clothed by God in animal skins after they had sinned (chap. 11) and mind-body dualism (chaps. 6 and 7). The work of many Western theological scholars in trying to understand the human mind is criticized as being overly simplistic and aligning too closely/easily with that of secular scholars (p. 118); the latter focus too much on how mind emerges out of matter, while the Orthodox recognize that matter emerges from the mind of God (p. 124).

Fifth, “Orthodox theology has avoided the Western tendency either to separate God from the world or else to make no proper distinction between them,” but instead maintains the “... sense of God’s being in all created things and yet utterly transcending them” (p. 143; also see pp. 156–57, 160). This underpins his later discussion of miracles (from the creation account to the modern day): while Western thinking sees these unusual events as “supernatural” and as breaks from “the normal,” Orthodoxy sees the everyday present as “sub-natural” and those unusual events as nature and its constituents inexorably being drawn back (or drawing themselves back?) toward “the normal,” toward the original *telos* of all creation which had been distorted by humans (pp. 19–20; also chap. 12). It also underpins his criticism of Western thinking on mind-body dualism for capitulating to reductionist materialist thinking and ideas such as emergence, rather than the Eastern concept of vitalism: “some kind of substance (in the philosophical sense) being added to the basic building blocks of nature in order to give rise to life and what is to be human” (pp. 102–7).

My assessment of this book is from the position of an outsider (one of the “Western scholars”) who accidentally stumbled into an in-house discussion because of the book’s misleading title. From this perspective, I fully agree with Knight that Eastern Orthodox thinking has made a valuable contribution to the faith-science dialogue. In particular, their emphasis on a more allegorical approach toward scripture, and a more mystical approach toward theology and the human-divine relationship. The Western emphasis on literalism, certainty, logic, and “personal relationship” has produced all kinds of problems for Christian theology, for the day-to-day Christian spiritual experience, and for our relationship with science. Moreover, on some of the other points that I listed above, I think the “superiority” of the Eastern approach depends on one’s worldview: it certainly works better if you adhere more specifically to an Eastern theology, but not so much if one holds a Western theology, in precisely the same way that a “literal” reading of scripture works perfectly well if one is a young earth creationist but not so much if one is an old earth creationist.

In conclusion, this book will be an excellent resource for those readers who intend to gain a deeper understanding of the Eastern Orthodox perspective and theological/hermeneutic approach. But for those who are committed to a Western theology or simply want to learn about “Science and the Christian

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Faith," I expect they will find this book hard going and possibly disappointing.

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SCIENCE IN SOCIETY

SCIENCE DENIAL: Why It Happens and What to Do about It by Gale M. Sinatra and Barbara K. Hofer. New York: Oxford University Press, 2021. 208 pages. Hardcover; \$35.00. ISBN: 9780190944681.

Science denial and scepticism are not new; however, the COVID-19 pandemic has brought the issue to the fore with an importance and an intensity that seems unmatched in recent history. While Galileo's theorem that the earth rotated around the sun may have shaken up the church and intelligentsia, it did not have the widespread effect on the daily lives of average people in the same way as COVID-19 vaccination or mask-wearing have had.

In their book, *Science Denial: Why It Happens and What to Do about It*, Gale Sinatra and Barbara Hofer draw on their own work, along with that of other experts, to attempt to identify the factors that influence science doubt and denial and to outline strategies for addressing these at individual and societal levels. Sinatra is Professor of Education and Psychology at the Rossier School of Education at the University of Southern California and Director of the Motivational Change Research Laboratory. Hofer is Professor of Psychology Emerita at Middlebury College.

As the authors point out early on, the book is unlikely to be read by "hard-core science denier(s)." It also is not solely aimed at scientists or academics, although it makes some very helpful points and can be useful to people actively engaged in scientific research and teaching. The authors state that the book is also aimed at readers who are interested in trying to understand how they themselves evaluate scientific issues, what cognitive biases they may have, and how to understand and interact with others who have different opinions or feelings about science or scientific issues. Most chapters end with calls to action addressed at individuals, educators, science communicators, and policy makers, with steps that can be taken to improve understanding and address science denial.

The book is arranged in two sections. The first section addresses the current situation, sets out definitions for science denial and doubt, and addresses two important venues where individuals obtain informa-

tion about science in general and specific issues in science: the online world and science education. The second section delves into the psychology of science denial: cognitive bias, epistemic cognition (ideas about knowledge and knowing), motivation, emotions, and attitudes.

The first chapter outlines several aspects of science denial in the modern context, outlining the role of science and scientific advances in modern life and touching on some of the pertinent scientific issues of the time: climate change, the dangers of smoking, genetically modified organisms, and of course, the COVID-19 pandemic. The chapter on navigating the online universe of information about science is frightening yet important reading. There are key discussions of how predetermined factors such as biases and algorithms may influence what one finds during an internet search and how digital literacy involves not just being able to find information but also being able to evaluate the information found. The chapter on science education provides valuable points about teaching science in a way that is engaging, fosters an openness to science, develops deeper understanding of the way that science is conducted, and shows how science is useful in everyday life.

The second section moves on to explore more deeply the psychological principles involved in how we come to terms with scientific information and the factors that influence acceptance, denial, or resistance. As a physician and a medical school faculty member in the middle of a global pandemic, I found this section more useful in trying to understand the roots of some of the controversy and the extreme reactions I have been seeing in the hospital and in the news.

Chapter 4, the first chapter in this section, explains cognitive biases and how even the most rational person has biases, ways of making decisions (fast reflexes vs. slower analysis and reflection), and how intuition, anecdotes, confirmation bias, and our own estimation (or misestimation) of what we already know can block impartial thinking about evidence.

The following chapter, "How Do Individuals Think about Knowledge and Knowing?," dives into epistemic cognition: how one recognizes and thinks about what knowledge is. The discussion of absolutism, multiplism, and evaluativism will be familiar to anyone who has ever stumbled into an argument about science over social media or at a family gathering. This is followed by a discussion of what people know about how science is done, the concept of uncertainty, and the role of trust in science

and scientific methods. Science and underrepresented populations, which is mentioned in the first chapter, is again mentioned very briefly here with examples illustrating how trust in science might be compromised.

Chapter 6 discusses how motivation and social identity can affect how one evaluates and takes a position on scientific findings. How information technology is influenced by, and in turn influences, these factors, particularly how we sort ourselves into groups online and the rise of “fake news.” The point about communication strategies being more effective from someone “in” the group and trying to foster identification can be an effective strategy when thinking about communicating or addressing conflict regarding scientific issues.

The chapter about emotions and attitudes is probably one of the most challenging for scientists, as it goes beyond focusing on facts and evidence, exploring how feelings and emotions affect how one thinks. The example they use is the demotion of Pluto from full planet status—an issue that does not have a lot of effect on daily life, unless you are a planetary astronomer, but which generated much public attention. It is a good example of how an emotional response can affect what one thinks about the immutability of scientific findings and science in general. Another crucial discussion addresses how emotional responses to studying science in school or interacting with less-formal science education at institutions (museums, zoos, etc.) can make some science knowledge easier or more difficult to think about.

The book concludes with a summary of the main points and a list of action points identified as “Solutions: A Field Guide to Addressing Science Denial, Doubt, and Resistance.” As with the end of the earlier chapters, these are divided into sections for individuals, educators, science communicators, and policy makers, with some expanded points and details.

Overall, the book is well written at a general level and is easy to follow. The examples illustrate rather basic dilemmas in science denial and doubt, and the discussions are not very formal and are often personalized (frequently using the authors’ studies and anecdotes). Although the chapters in the second section do go deeper into the psychological theories and evidence for looking at how we think, or don’t think, about science, the information is still at an introductory level. For more detail, each chapter is very thoroughly referenced and there are extensive

citations for further background, exploration, and deeper detail.

Although the book is not a difficult read, I must admit that it took me some effort to pick it up and get through it. As a physician and an educator, I am used to discussing difficult questions about vaccinations, use of medications, clinical trials, as well as known unknowns and unknown unknowns, in medicine. During the pandemic, however, the amount and fervency of public, private, and professional controversy and discussion has been at times overwhelming. One point of the book is that as individuals each of us needs to examine how we look at science, how we think about what we know and what we don’t know, and how we try to understand others who don’t share our opinions or evaluation of evidence. I recognized a few of my own emotional responses and cognitive biases. While this book will not eliminate science denial, it does lay out some steps to having a positive impact, both on the individual and societal level.

With regard to spiritual or Christian doctrinal issues and how these have sometimes clashed with science, the authors present examples (i.e., evolution and a Christian university student) thoughtfully and without judgment, while still standing strong on the importance of science and understanding how these are not mutually exclusive and how the conflict can be addressed.

As I write this, I had been hoping that the pandemic would be over by now and that there would be less need for a book like this. After the pandemic, there will continue to be climate change and other important issues requiring scientific thought and attention. Having read the book through and thinking about where my own responses were coming from, I do feel more optimistic and better prepared to go out there and be an advocate, not an adversary, when trying to work through situations that involve science denial.

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TECHNOLOGY

THE ROBOT WILL SEE YOU NOW: Artificial Intelligence and the Christian Faith by John Wyatt and Stephen N. Williams, eds. London, UK: SPCK Publishing, 2021. 256 pages. Paperback; \$31.99. ISBN: 9780281084357.

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Writing about the impact of artificial intelligence on our understanding of what it means to be human, John Wyatt summarizes what I found to be the most helpful and interesting ideas in *The Robot Will See You Now*:

Might it be possible that the twenty-first century provides a ... range of profound challenges to orthodox understandings of human embodiment, personhood, relationships, morality and future hope? The ubiquity and effectiveness of various forms of machine intelligence have created a distorting lens through which our humanity is being perceived in new ways. ... But perhaps this time in history represents a unique opportunity for creative thought and engagement as a Christian community, to deepen and enrich our understanding of what it means to be human, of the extraordinary possibilities of the tools we are creating and of the strange new world in which we find ourselves. (p. 72)

In each chapter a different writer offers their perspective on particular challenges posed by artificial intelligence (AI)—sometimes AI as implemented in existing technology, sometimes AI as imagined in literature, film, or futurist thinkers' predictions—to particular philosophical or theological claims consistent with Christian faith. (The writers are Christians; the book assumes a reader familiar with the vocabulary and sympathetic to the foundational beliefs of Christianity.) For example, Christina Bieber Lake draws on science fiction writers' ideas about the potential and significance of AI, suggesting that increasingly realistic simulation technology undermines our ability to discern what is real. She suggests this may lead us to question whether the distinction between simulation and reality is even meaningful, whether it matters if something is real or simulated.

Later in the book similar concerns are echoed by other writers as they consider robots of various kinds, designed to mimic human beings in various ways: as companions or caregivers, soldiers or sex partners. (Some readers may find Andrew Graystone's descriptions of "sextech" awkward reading, but his chapter also provides thoughtful reflection on the significance of sex in human relationships and the absence of such significance in a "relationship" between a person and a technological device.) A recurring theme is summarized by Vinoth Ramachandra:

... by using a common vocabulary (for example, "information," "intelligence," "neural networks," "emotions") when discussing minds, brains and

computers, we humanize the machines even as we mechanize humans. (p. 85)

As a computer scientist who is a Christian (and an educator of future computer scientists at a Christian university), I know that computer programming, and quantitative problem solving more generally, can be fun and meaningful. I am thankful to God for a job I enjoy and believe we can honor him by making and sharing good software—where "good" is not only defined by how the software is used but encompasses elegance and beauty in specification, design, and implementation as well. This perspective, or something like it, is mentioned several places in the book—most clearly by Crystal Downing and Noreen Hertzfeld in their discussion of human creativity, including technological making, as a reflection of our having been created in the image of a creative God. (Andrzej Turkanik writes about this as well, but his focus is on the creativity of composers and visual artists, not scientists or engineers.) Unfortunately, in several chapters there is a sense of "us and them," where "us" refers to Christians who are not involved in the development of new technologies, and "them" refers to those other people—or perhaps robots, in the not-too-distant future—who are.

The book includes an introductory chapter written by Peter Robinson, professor and researcher in the field of human-computer interaction, but this is written as an overview of vocabulary and current trends for readers less familiar with AI; computing professionals are mentioned but only to point out their responsibility to uphold appropriate ethical standards. I wonder whether a Christian engineer or software developer might be more receptive to a book like this if it included more concrete affirmation of the (very human) creative and cooperative work behind what is called artificial technology.

Recently I found myself in need of emergency medical care, frightened by symptoms different from anything I had experienced before. In a situation like this, one may feel vulnerable, helpless, and alone. After this (thankfully temporary!) illness, I reread John Wyatt's chapter on artificial intelligence applications in health and social care—the chapter most evocative of the book's clever title, *The Robot Will See You Now*. His writing about the deeper relational needs of a physically sick person—solidarity, compassion, understanding, empathy—struck me with a new and powerful urgency as I thought about my own recent experience. How would I have reacted to an invitation to pretend that a social robot could offer me these things? I am not sure. I knew I needed help;

perhaps I was ready to accept help from whatever source was available. But it makes me very thankful, when I try to imagine being helped by a robot, to have had the opportunity to interact with caring human beings whose compassion and understanding I can be confident was genuine.

Overall, I found *The Robot Will See You Now* to be a very thoughtful and well-written book, and I would recommend it to readers interested in reflecting on the interplay between artificial intelligence—both the technology and the philosophical or cultural ideas associated with that technology—and our ideas and assumptions about what it means to be human. The concern mentioned above, about how engineers or software developers might respond to the book, should not be interpreted as criticism. My hope is that Christian computing professionals would in fact be receptive to a book like this and would think carefully about the long-term impact of their work on how people understand themselves and their relationship to technology.

Reviewed by David Owen, Associate Professor of Computer Science at Messiah University, Grantham, PA 17055.

RELIGION AND THE TECHNOLOGICAL FUTURE: An Introduction to Biohacking, Artificial Intelligence, and Transhumanism by Calvin Mercer and Tracy J. Trothen. Cham, Switzerland: Palgrave Macmillan, 2021. 266 pages. Paperback; \$43.93. ISBN: 9783030623586.

Christians understand the world in terms of history. They look back to the creation and the Fall, are encouraged by the unfolding story of God's plan to redeem his people, and they look forward to the Second Coming, the resurrection of the dead, and the eschaton. But Calvin Mercer and Tracy J. Trothen claim: "The religions of the world will come to an end, or thrive, depending on how they respond" to the challenges of emerging human enhancement technologies (p. 3). Really? An existential threat to Christianity? Is such a threat possible? And if the Holy Spirit is working through today's church, how could "human enhancement technologies" affect its thriving?

To begin, it is necessary to note the first word of the book's title: religion. Mercer and Trothen are professors of religious studies at secular schools, East Carolina University and Queen's University, respectively. In such programs, religions are often reduced to social and cultural phenomena. They are important in human history, culture, international affairs, and other fields, but their internal details, such as their central god(s), are of secondary importance.

Serious Bible-believing Christians *are* interested in how the church and the gospel are received in the world, but the authors' *exclusive* focus on externals may be unsettling. So, what are Mercer and Trothen up to?

Like others, Mercer and Trothen call attention to how futuristic technologies challenge conventional beliefs, including central elements of Christian theology, such as the doctrine of human beings made in the image and likeness of God, the *imago Dei*. Indeed, through Part I, chapters 1–4, they project how future technology will interact with—and threaten—two broad categories of religious faith: monotheistic and karmic. Chapter 3 explores basic concepts of these faith categories and the technological enhancements they will encounter.

In Part II, chapters 5–7, the authors survey the potential for techno-religious conflicts and synergies. And in Part III, chapters 8–10, they introduce "radical" enhancements: cryonics, mind uploading, and artificial superintelligence. Finally, in Part IV, chapter 11, Mercer and Trothen reiterate their main points, with special emphasis on their claim that "the future of religion and the welfare of society in general depends in part on how religions address radical human enhancement in the coming years" (p. 226).

Religion and the Technological Future was written as a textbook. All eleven chapters end with "Questions for Discussion," most requiring students to judge whether some development would be good or bad. No doubt, such exercises would test students' ethical reasoning, so the book may serve the pedagogical work of Mercer and Trothen. However, its shortcomings make it unsuitable for other audiences.

Readers with serious religious commitments will doubt the need to adjust their beliefs to accommodate technological change. Mercer and Trothen are aware of this fact; they frequently note that religious conservatives are less open to change. But history shows that change does occur, sometimes driven by conservatives willing to sacrifice stability in order to preserve what they value more. Indeed, with sufficient reasons, today's religious conservative could be tomorrow's revolutionary. Such a shift could occur within one religious worldview, its internals shaping how believers view external affairs and act to produce change.

Mercer and Trothen understand that religious reasoning is important, but they offer no direct doctrinal evidence why technology is a substantial threat to

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beliefs, let alone an existential one. Chapter 3 (titled “Transhumanism, the Posthuman, and the Religions: Exploring Basic Concepts”) is only 24 pages long; five pages offer definitions of transhumanism and posthumanism, and the last page lists discussion questions. So, the authors attempt to characterize the world’s major monotheistic and karmic religions *in only 18 pages*. In-depth doctrinal arguments are needed, but they offer only thin and disappointing caricatures of belief systems that are held dear by most of the human race. Religion scholars may find this interesting, even compelling, but it will leave true believers cold.

Leaving undone the hard work of defining criteria by which the faithful in one tradition or another would judge technological enhancements, Mercer and Trothen speculate about the future using an ill-conceived conservative-to-liberal continuum. Where depth is needed, tautologies take center stage. In effect, they make the simplistic argument that some people will resist enhancement technologies because unspecified religious or political convictions make them resistant.

Religion and the Technological Future offers an intriguing view of the future, but it assumes that technoscientific progress will come with an oppressive loss of control. Yes, heartfelt faith traditions will, in one way or another, be changed by emerging technologies, but is it inevitable that believers will face an existential crisis? And if emergent technologies actually threaten what people truly value, will they not be rejected?

Consider nuclear weapons. After Hiroshima and Nagasaki, the accelerating arms race cast a dark shadow over civilization. Books and movies such as *Fail-Safe* and *On the Beach* left little room for hope. Then, in 1964, *Dr. Strangelove* flipped the narrative, presenting “The Bomb” as a ridiculous farce. People and societies adapted to the existence of nuclear weapons and moved on with life. Will they not also adapt to whatever the technological future brings?

In this century, advanced robots, computer systems, and who-knows-what will certainly emerge, but God is everlasting, and he promises that believers will have everlasting life. So, let his will be done, *on Earth as it is in heaven*, notwithstanding whatever dark shadows of change may come.

Reviewed by David C. Winyard Sr., Department of Engineering, Grace College and Seminary, Winona Lake, IN 46590. ◀

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Agriculture: An Industrial Paradigm or an Ecological Paradigm

I read with interest Terry Gray’s “Pronuclear Environmentalists: An Introduction to Ecomodernism” (*PSCF* 73, no. 4 [2021]: 195–201) and found the article very informative. Gray advocates for increased intensification of agriculture, arguing that this will free up other land for wild nature. However, the impacts of such intensification will not and cannot remain localized.

I grew up in Iowa, where the native tall grass prairie ecosystem was replaced by one of the most intensively industrial agricultural regions on the planet. Grassland flora and fauna are now among the most at risk on the continent. The deep prairie loam soils have been greatly reduced in depth and become compacted by heavy machinery. Fertility is largely maintained by inputs of fossil-fuel based synthetic fertilizers. Flooding impacts have intensified due to the loss of most of Iowa’s grasslands and wetlands. Water quality due to agricultural use is a major issue in Iowa and throughout the Mississippi River watershed.

Hope lies in the application of techniques (such as in-field prairie strips and wetland restoration) to soften these impacts. But more fundamentally, agriculture needs to move from an industrial paradigm that treats land as just an economic asset to an ecological paradigm which recognizes the land as a gift from the Creator and treated accordingly.

Lynn Braband
ASA member

Called to a God-Centered Garden or City?

Thank you to Lynn Braband for his response to my article (Terry Gray, “Pronuclear Environmentalists: An Introduction to Ecomodernism,” *PSCF* 73, no. 4 [2021]: 195–201). Admittedly, he was responding only to a near peripheral comment, but one that in some ways engages the heart of the article. I sense a “back to the Garden” spirit in his comments and especially in the last sentence. I will not deny the several problems with industrial agriculture that he points to, but the solutions to these are not to return to a de-industrialized agriculture. The productivity of modern agriculture is a necessary development and is fully consistent with a Christian stewardship view of creation which is not a mere preservation of God-created and wild nature. It includes development

and use for the good of humanity and creation and a subduing of Earth.

As I pointed out in my article, there does seem to be an arc from garden to city in the biblical story. The ills highlighted do not mandate a cessation of industrial agriculture, but rather, industrial solutions that correct the problems, such as nitrogen pollution, soil damage, and water management. Like it or not, the planet has already been terra-formed by human activity. Ecomodernists are fond of pointing out that intensification of the human impact in cities and industrial agriculture actually can lead to more “wilding,” restoring once-used agricultural areas to their former pre-agricultural state.

Terry Gray
ASA Fellow

On the Dilemma of Heavenly Freedom and the Historical Adam

In an interesting recent article (“Theodicy and the Historical Adam: Questioning a Central Assumption Motivating Historicist Readings,” *PSCF* 74, no. 1 [2022]: 39–53), Patrick Franklin raised questions about a traditional belief in the Fall by asking six similar questions, which are largely summarized by the first one:

If it is possible for us to be made fully free and yet totally incapable of sinning, as our future glorified state revealed in scripture suggests, then *why did God not create us in this state to begin with?*¹

This is surely an important question, well worthy of our attention. And by repeating a very similar question five more times, Franklin seems to be suggesting that God’s behavior is inexplicable. But perhaps we need to reexamine the premise that led to these seemingly inexplicable expectations. Perhaps scripture does not suggest that it is possible for us to be made “fully free and yet totally incapable of sinning” in the way that Franklin assumes. Indeed, this issue is well known in the theological-philosophical literature, where it has been extensively debated.² For example, James Sennett called it the “dilemma of heavenly freedom.”³

The Dilemma of Heavenly Freedom

From a philosophical point of view, the state of humans being completely sinless seems incompatible with their exercise of free will. Therefore, attempts to solve the dilemma of heavenly freedom generally involve some kind of limitation on being fully free or fully sinless. Of these alternatives, the least satisfactory seems to be a limitation on heavenly sinlessness,

which has been called the “strategy of concession.”⁴ The problem, as Franklin asserts, is that if the glorified redeemed are capable of sinning, “the pattern of fall and redemption could go on infinitely and Christ would have to be crucified and risen repeatedly.”⁵ However, the other alternatives require some limitation on heavenly freedom, which also seems problematical, based on the text quoted by Franklin:

Now the Lord is the Spirit, and where the Spirit of the Lord is, there is freedom. (2 Cor. 3:17)

The inference is that where God’s Spirit is completely revealed, there will be complete freedom. For example, Franklin argues that the capacity to sin limits freedom, and therefore the absence of sin is a *gain* in freedom. And something similar was proposed by Augustine:

Neither are we to suppose that because sin shall have no power to delight them, free will must be withdrawn. It will, on the contrary, be all the more truly free, because set free from delight in sinning to take unfailing delight in not sinning.⁶

Anselm of Canterbury made a similar claim:

I do not think free will is the power to sin or not to sin. Indeed if this were its definition, neither God nor the angels, who are unable to sin, would have free will, which it is impious to say.⁷

But Anselm qualifies this assertion later in his dialogue. Firstly, he recognizes that the free will of God is different from that of angels and of humans, since the former is intrinsic, whereas the latter is given by God. Secondly, he recognizes that the angels “did” have the free will to do evil, because the fallen angels exercised that freedom:

The apostate angel and the first man sinned through free will, because they sinned through a judgment that is so free that it cannot be coerced to sin by anything else.⁸

Anselm’s point is that while Lucifer and Adam had a free choice not to sin, no subsequent person except Jesus had a free choice not to sin. But having *not* sinned with Lucifer, the good angels preserve their free will not to sin for the rest of eternity:

Since the divine free will and that of the good angels cannot sin, to be able to sin does not belong in the definition of free will.⁹

In subsequent philosophical thinking, this affirmation has been called compatibilism.¹⁰ It avoids the dilemma of heavenly freedom by claiming that this free will is “deterministic,” as opposed to what most people think of free will, which is “libertarian”

(undetermined free will). However, this narrower definition of free will has a price. Deterministic free will undermines what philosophers call the “free will defense,” which holds that libertarian free will is such a great virtue that it justifies the existence of evil in the world, even though God could otherwise remove that evil.¹¹ So, as Franklin implies by his repeated questions, if the “good” of libertarian free will in heaven is to be abandoned as unnecessary, why not abandon it on Earth as well? But if libertarian free will is not necessary on Earth, God would be allowing evil on Earth for no good reason.

It seems clear that this line of thinking is very unpalatable. But is it logical? I suggest not, because it fails to see the whole picture. God apparently *did* give libertarian free will to both angels and humans, as Anselm affirms:

The former was the case with all the angels before the good were confirmed and the evil fell, and with all men prior to death who have this rectitude.¹²

Anselm did not explain how this works, but James Sennett expressed it as what he called the “proximate conception” of freedom, which

holds that actions may be free though determined, but only if they have in their causal history some undetermined free actions by the same agent.¹³

For the angels, this “causal history” was their irrevocable decision to become either good or bad angels, a choice which is then eternally “determined.” For humans, this “causal history” is established on Earth as a choice for or against God, and apparently becomes irrevocable after death, so that those who chose God are “determined” to always will good. This proposal leads to perfect free will and complete sinlessness in heaven, while saving the free will defense on Earth. Put another way, freedom on Earth is libertarian, but freedom in heaven is compatibilist. However, there is no reason to think that this arrangement is an accident. Surely God planned that humans would have an opportunity to decide for or against him, but in a way that did not simply repeat the choice given to the angels.

The Historical Adam

The above argument shows that the proximate conception of freedom satisfies the free will defense. This, therefore, supports the traditional view that Adam and Eve, under the influence of the serpent, were the originators of human sin. Further, since the serpent is traditionally identified as the manifestation of the apostate angel, it follows that he, not God, is the source of evil in the world. This represents a

valid justification (theodicy) that God is not the originator of evil.

But is the Fall really Adam’s principal role or attribute in biblical history? I suggest not. Adam’s principal attribute is that he was “the man” – the first man to experience the immanent presence of God. This suggestion that the Fall is not Adam’s principal attribute is validated by the *Priestly Source*, which has no Fall, but does have “the man,” also named Adam, who is the first of God’s elect people. So, Adam can be defined apart from his role in the Fall. And in the latter role, Franklin, following Enns, argues that Paul’s emphasis on Adam as the first sinner is driven by the need for comparison with the second Adam¹⁴; hence, Paul’s omission of Eve, who according to Genesis was actually the first sinner.

Scientific evidence that Adam was not the first human being may weaken Augustine’s interpretation of original sin, but it does not weaken Adam’s role as the first recipient of manifest revelation. It was this revelation, rather than Adam’s status as a member of the human species, that made him spiritually perfect until the Fall. And, however virtuous the first recipient of this revelation (presumably God chose a virtuous man), he was bound to fall. However, Adam’s Fall is no less cosmic in its significance just because we infer that we are individually presented with a similar (but not identical) choice: accept or reject God’s offer of redemption. Adam was still the first man to fall from spiritual perfection, and a template that all humanity was doomed to follow.

Notes

¹Patrick S. Franklin, “Theodicy and the Historical Adam: Questioning a Central Assumption Motivating Historicist Readings,” *Perspectives on Science and Christian Faith* 74, no. 1 (2022): 42.

²Timothy Pawl and Kevin Timpe, “Incompatibilism, Sin, and Free Will in Heaven,” *Faith and Philosophy* 26, no. 4 (2009): 398–419, <https://doi.org/10.5840/faithphil200926437>.

³James F. Sennett, “Is There Freedom in Heaven?,” *Faith and Philosophy* 16, no. 1 (1999): 69–82, <https://doi.org/10.5840/faithphil19991617>.

⁴Pawl and Timpe, “Incompatibilism, Sin, and Free Will in Heaven.”

⁵Franklin, “Theodicy and the Historical Adam,” 41.

⁶Saint Augustine, *The City of God*, trans. Marcus Dods (Edinburgh, UK: T&T Clark, 1872), Book 22, chapter 30.

⁷Anselm, *On Free Will*, in *Anselm of Canterbury: The Major Works*, ed. Brian Davies and Gill R. Evans (Oxford, UK: Oxford University Press, 1998), 175–92.

⁸*Ibid.*, chapter 2.

⁹*Ibid.*, chapter 1.

¹⁰Sennett, “Is There Freedom in Heaven?,” 71.

¹¹*Ibid.*, 69.

¹²Anselm, *On Free Will*, chapter 14.

¹³Sennett, “Is There Freedom in Heaven?,” 69.

¹⁴Peter Enns, *The Evolution of Adam: What the Bible Does and Doesn't Say about Human Origins* (Grand Rapids, MI: Brazos, 2012), 120.

Alan Dickin
ASA Fellow

Response to Alan Dickin by Patrick Franklin

I would like to express my gratitude to Alan Dickin for his thoughtful response to my article on theodicy and the historical Adam (Patrick Franklin, "Theodicy and the Historical Adam: Questioning a Central Assumption Motivating Historicist Readings," *PSCF* 74, no. 1 [2022]: 39–53). I have appreciated the opportunity to reflect more deeply on the issues, particularly on the nature and implications of freedom in relation to sin. Specifically, I have had opportunity to read the key article by James F. Sennett that Dickin cites,¹ as well as various articles in the journal *Faith and Philosophy* which engage Sennett and move the discussion forward.² This has been a stimulating and enriching exercise, for which I thank Alan. He rightly notes that the discussion of "the dilemma of heavenly freedom" has been extensively debated in theological-philosophical literature, though I think it's also important to point out that the debate is far from being settled.

Dickin's concern regarding human freedom is two-fold: first, he suggests that my account of heavenly freedom is inadequate; second, he worries that my argument threatens to undermine the freewill defence in theodicy. In response, I would like to concede—partly, at least—the first point: I do think my account of freedom could and should be improved (though I'm not sure anyone has yet offered a fully satisfactory response to the dilemma of heavenly freedom). However, I would like to reject or at least assuage the second concern.

Dickin draws on Sennett's article to endorse what Sennett calls the "*Proximate Conception* of freedom." Sennett puts forth this notion of freedom in order to avoid two problematic responses to the dilemma of heavenly freedom, that is, to reject either (a) the idea that human beings are sinless (and incapable of sin) in heaven or (b) the idea that humans lack freedom in heaven. His conception of freedom in heaven is "*proximate*" in the sense that the choices of perfected humans in heaven are proximately determined (since humans can no longer choose evil) but not remotely determined (i.e., determined *all the way down*, we might say). To give an illustration of how this works, my present (but predetermined) incapability to

choose the evil of brutally torturing an innocent child for five cents might be grounded in freely chosen decisions and acts that have shaped my character in the past in such a way that I am unable to make this choice in the present (thankfully). Sennett argues that freedom is forfeited only if heavenly choices are both proximately and remotely determined, that is, only if proximately determined choices in heaven do not point back in some way to previous nondetermined libertarian choices made during my life on Earth.

The upshot of Sennett's solution to the dilemma of heavenly freedom is that "there is a way to argue that heaven has only compatibilist freedom while Earth includes at least some libertarian freedom," leading to the conclusion that the lack of human capacity to sin in heaven does not diminish human freedom so long as present proximate determinism is grounded in past (i.e., historically, during one's life on Earth) libertarian choice(s). Hence, the more expanded terminology Sennett gives to his notion: the "*proximate conception of compatibilist freedom*." Dickin summarizes, "For humans, this 'causal history' is established on Earth as a choice for or against God, and *apparently becomes irrevocable after death*, so that those who chose God are 'determined' to always will good" (italics added). I have italicized part of this summary to indicate something that Dickin leaves out of his summary of Sennett, something which is crucial but which also raises puzzling theological questions.

Sennett goes on to clarify that it is possible to affirm heavenly freedom, even if it is proximately determined, if that freedom is grounded in the agent's freely chosen (in the libertarian sense) character formation during life on Earth. As he puts it, "a character that is libertarian freely chosen is the only kind of character that can determine compatibilist free actions."³ Expanding on this, he writes, "The dilemma of heavenly freedom is resolved if all libertarian free actions contributing to the characters of agents in heaven were performed while those agents were on Earth. That is, the characters are formed on Earth, but those characters determine only actions for good once the agents enter heaven."⁴ The advantage of this proposal is that it safeguards both the freedom of human beings in heaven (in a compatibilist sense) while also safeguarding the freewill defense to the theodicy problem (which requires that human beings possess—or possessed at some point—libertarian freedom).

For brevity, I will mention two theological problems with Sennett's proposal. The first is the charge

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of Pelagianism or semi-Pelagianism, which Sennett acknowledges as potentially problematic but does not—to my satisfaction—offer a sufficient response. In short, his solution seems to attribute too much of our glorified state to our own human actions and choices and gives insufficient attention to the transformative and miraculous work of God in perfecting us (e.g., Rom. 8:30; 1 Cor. 15:49–53; Phil. 3:20–21; 1 John 3:2; Rev. 21:3–5). Incidentally, what he lacks is the kind of participatory trinitarian theological framework that I propose in my *PSCF* article, which accounts for how God enables human agency while also sharing with us important properties of God’s own divine life and character.

The second problem is that Sennett does not explain how our heavenly character becomes sufficiently holy and perfect (and stably enduring) so as to make us incapable of sinning in heaven. Other thinkers offer potential explanations for this, but these explanations in turn beg more questions. For example, Robert Hartman suggests that our character could be perfected in one of two ways, either by a unilateral and immediately effective act of God when humans are resurrected (the unilateral model) or by means of cooperative divine assistance over time (the cooperative model), which most likely requires a doctrine of post-mortem existence in purgatory.⁵ He goes on to demonstrate by philosophical argument why the cooperative model is superior and more likely to be true. While these theological problems are not necessarily insurmountable, they are certainly controversial, especially for Protestants.⁶

In sum, does Sennett’s proposal solve the dilemma of heavenly freedom? Perhaps it does help, and the subsequent discussion of this problem in *Faith and Philosophy* is indeed interesting and enriching, but it also raises significant theological questions that demand further reflection and clarification.

In response to Dickin’s worry that my argument undermines the freewill defense, let me offer two brief points. First, it is not my intention to undermine the freewill defense; indeed, I hold to a theological version of the freewill defense, though space precludes me from explicating it here. Dickin writes that “Franklin seems to be suggesting that God’s behavior is inexplicable.” I suggest nothing of the sort; in fact, I explicitly write, “I am not suggesting that God lacks sufficiently justified reasons for allowing sin and evil into the world.”⁷ I simply do not fully understand those reasons in a detailed way, nor do I think that scripture gives us a clear answer.

Second, whatever we make of the arguments of Sennett and others concerning heavenly freedom, none of that necessitates the existence of a historical Adam. Dickin seems to tie the historical existence of Adam to the freewill defense in a way that I do not. He writes, “The above argument shows that the Proximate Conception of freedom satisfies the Free Will Defense. This therefore supports the traditional view that Adam and Eve, under the influence of the serpent, were the originators of human sin.” However, this is a *non sequitur*. The freewill defense does not logically require the existence of Adam and Eve, nor does it require an idyllic state of original perfection. All that it requires is that humans had (or have) the opportunity to either accept or reject God’s grace and Lordship, that they reject(ed) it, and that morally significant suffering and evil are thus the consequence of the misuse of human freedom rather than the creation of God.

Thanks once again to Alan for a stimulating exchange. I fully acknowledge that there is much more to discuss.

Notes

¹James F. Sennett, “Is There Freedom in Heaven?,” *Faith and Philosophy* 16, no. 1 (1999): 69–82, <https://doi.org/10.5840/faithphil19991617>.

²These include Timothy Pawl and Kevin Timpe, “Incompatibilism, Sin, and Free Will in Heaven,” *Faith and Philosophy* 26, no. 4 (2009): 398–419, <https://doi.org/10.5840/faithphil200926437>; Christopher M. Brown, “Making the Best Even Better: Modifying Pawl and Timpe’s Solution to the Problem of Heavenly Freedom,” *Faith and Philosophy* 32, no. 1 (2015): 63–80, <https://doi.org/10.5840/faithphil201531629>; and Robert J. Hartman, “Heavenly Freedom and Two Models of Character Perfection,” *Faith and Philosophy* 38, no. 1 (2021): 45–64, <https://doi.org/10.37977/faithphil.2021.38.1.4>.

³Sennett, “Freedom in Heaven,” 74.

⁴*Ibid.*, 75.

⁵Hartman, “Heavenly Freedom,” 47–48. Brown leans toward a unilateral model, drawing on Aquinas’s discussion of the beatific vision of the saints in heaven as a participation in God’s own life, such that the beatitude of the saints is invariable, immutable, and timeless (Brown, “Making the Best Even Better,” 73–74).

⁶Despite the lack of biblical evidence for purgatory, the evangelical philosopher Jerry Walls makes a philosophical case for the existence of purgatory along similar lines. See Jerry L. Walls, “Hell and Purgatory,” in *Four Views on Hell*, ed. Preston Sprinkle (Grand Rapids, MI: Zondervan, 2016), 145–73.

⁷Patrick S. Franklin, “Theodicy and the Historical Adam: Questioning a Central Assumption Motivating Historicist Readings,” *PSCF* 74, no. 1 (2022): 43.

Patrick S. Franklin
ASA Fellow



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