

straightjacket. I found Jaeger's discussion of nature, laws, and God's activity in creation in this chapter to basically be reading this dichotomy into the biblical texts (this is what many of her sources do as well). The concept of mediation has been sorely neglected in theology and hermeneutics and offers a way out of the false dichotomy.<sup>2</sup> Unfortunately, mediated action only gets some glancing mentions in the book (e.g., p. 144). Readers will not find the clarity and insight they seek here.

After a summative discussion of historical sources for the origin and motivation for the modern conception of laws of nature (chapter 2, Part 3), Jaeger's conclusion is that biblical revelation provided necessary conditions for the development of the modern notion of laws. In agreement with sound scholarship on the question, she acknowledges that biblical revelation does not provide sufficient conditions for the modern notion of laws. Moreover, through exploring aspects of philosophy of science as well as developments in relativity theory, quantum mechanics, and chaos (chapter 3, Part 3), Jaeger concludes that biblical usage of "law" is in terms of "everyday language" and "prescientific" as in premodern science (pp. 206–7). Yet, only those who have not read much in the literature discussing the history of science and religion will find new information on laws of nature in Part 3.

The fundamental difficulty with this book is that despite its overwhelming number of footnotes (three chapters have over 78; two more chapters, over 100; and one chapter even has 238!), it reads as if Jaeger is only first coming to terms with the science-religion literature and only has a narrow feel for what has been explored therein. The best way to read this book is to obtain it from the library and only look at the parts that interest you as this is not a book that *PSCF* readers should purchase.

A final warning: This book was originally written in French which, as with many languages, makes clear the distinction between the use of the second person plural to refer to the self—the so-called royal we—and the third person plural to refer to a group of people. Unfortunately, the translation of Jaeger's book collapses these different senses together. The translation did her a disservice by not using "I" whenever she referred to herself, or at least substituting "humans," "people," or some other elocution for "we" whenever Jaeger refers to people in general. Readers will grow tired of constantly having to ask, "Who is the 'we'?" page after page.

#### Notes

<sup>1</sup>For example, C. E. Gunton, *The Triune Creator: A Historical and Systematic Study* (Grand Rapids, MI: Eerdmans, 1998); T. F. Torrance, *The Ground and Grammar of Theology: Consonance between Theology and Science* (1980; reprint, Edinburgh: T&T Clark, 2005); and F. Watson, *Text and Truth: Redefining Biblical Theology* (Edinburgh: T&T Clark, 1997).

<sup>2</sup>Gunton, *The Triune Creator: A Historical and Systematic Study*; and R. C. Bishop, "Recovering the Doctrine of Creation: A Theological View of Science," *Scholarly Papers*, The BioLogos Foundation (January 31, 2011), <http://biologos.org/projects/scholar-essays>.

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## Letters

### On the Relevance of the Idea of Complementarity

I should like to thank Christopher Rios for his fascinating historical article on the idea of complementarity in discussions about the relation between science and Christian belief ("Claiming Complementarity," *PSCF* 63, no. 2 [2011]: 75–84). As an octogenarian, I have had the privilege of meeting a number of the protagonists for this idea.

However, as an engineering scientist, I have often wondered whether both scientists and theologians can forget that their specialist disciplines, such as all human knowledge, concern themselves with models of reality. In engineering, such models are constructed by selecting a small number of parameters which are of special importance for the operation of a device or system. These parameters are constructs of the human mind.

Engineers have constantly to remind themselves that their models are not the actual thing. Models can never be a substitute for a full-scale test. Moreover, useful modeling requires many different models of the same object. Thus a thermodynamic model of a gas turbine does not provide information about the price of gas in its effect on the viability of a project. Engineers who ignore economic models go out of business. This does not seem to me to be due to a philosophical principle of complementarity, but to the distinction between necessary and sufficient conditions in the solution of a problem.

*A fortiori* even the variety of models cannot elucidate the desirability of building a gas power station which depends on its purpose in generating electricity with its social consequences. Although Bohr's principle is undoubtedly important in the context of quantum physics, it may not be relevant to discussions between theology and science. It brings to my mind a comment attributed to Francis Bacon on William Gilbert's book *De Magnete*, "Gilbert has attempted to construct a world using material insufficient for the pins of a rowing boat."

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### Biblical Longevities: Some Questions and Issues

Walter Makous, "Biblical Longevities: Empirical Data or Fabricated Numbers?" (*PSCF* 63, no. 2 [2011]: 117–30) presents a novel approach to analyzing Old Testament genealogies. However, his methodology raises a number of significant questions which serve to undermine his conclusions.

Most of these questions arise from his Table 1, a purported listing of all generations from Adam to Manasseh which is used for the longevity plot of Figure 1. In order to be correct, it should contain no duplications or gaps. However, it has both. For instance, ordinals 21 and 22, Ishmael and Isaac, are both sons of Abram, ordinal 20, and thus redundant. Similarly, Aaron and Moses, ordinals

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28 and 29, are both sons of Amram, ordinal 27. Missing generations abound in the table. David is the only king listed from the time of the unified monarchy, leaving one to wonder what happened to Saul and Solomon. Furthermore, the time of the Judges is virtually absent. Acts 13:18–20 states that the period from the conquest to Samuel was 450 years. Yet, Eli (ordinal 31) is the only judge listed in the table. Such omissions and duplications clearly invalidate the author's L equation based on ordinal number.

The author also ignores the clear lack of expected randomness in many of the entries of Table 1. In the best example, Noah (ordinal 10) was 500 years old when his sons were born and the Flood followed 100 years later when he was 600. His son Shem (ordinal 11) became a father when he was 100 years old and he lived 500 more years, dying at the age of 600. The chance of this being anything other than a fabricated, symbolic use of special numbers is miniscule. Also consider the ordinals 21, 25, and 27 which all list an age at death of 137 years. What is the probability that any three ages will be identical out of 7 selected randomly within a range of 54 years (the period covered by these ordinals according to the L equation)? The answer is only 0.011. It is concluded that an identical trio of ages as shown in the table is a highly improbable occurrence and a strong sign of fabrication.

One is also suspicious of unrealistic data "bunching" which occurs between the total ages of 200 and 600. Ordinals 12–14 list closely spaced ages of 438, 433, and 464. This is followed by a gap of around 200 years to ordinals 15–17 which show the ages of 239, 239 (which, according to the L equation, should be 40 years apart), and 230. Determining a natural explanation for such an unlikely spacing of numbers is very problematic. The author also argues for rounding but fails to explain table entries which are clearly not rounded, nor provide any reference to the use of this mathematical practice with regard to ages during the first millennium BCE.

The author states that all genealogical numbers used in his study are obtained by a computer search of the (Masoretic-based) NIV biblical edition. However, this method does not work for the patriarchal period since multiple texts from antiquity exist which differ in the various ages listed. These include the Septuagint and the Samaritan Pentateuch, with the Book of Jubilees and writings of Josephus providing secondary sources. To add to the problem, different versions of the Septuagint (Lucian and Alexandrian) even disagree on some of their numbers. The differences between the ages in these various texts are significant, with many corresponding numbers differing by 100 or more. The author fails to mention these other versions and how they would affect his conclusions.

A final significant issue left unaddressed by the author is how the earliest genealogical numbers were accurately transmitted. The first written Hebrew records appear in the time of the united kingdom around the eleventh century BCE. Thus, all genealogical ages prior to that time were almost certainly transmitted orally in a tribal, pastoral environment. Although it has been shown that folk tales and myths describing major events (e.g., a volcanic eruption) have been transmitted in such a way for as long as thousands of years, accurate transmission of genera-

tions of ages over such periods is undemonstrated. In fact, it has been shown that oral transmission encourages stories, including numbers, to be changed and adapted to the needs of the bard and the situation. Accurate ages from patriarchal times are thus unproven and highly questionable.

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