



Fixing a Math Error in My Book

S. Joshua Swamidass

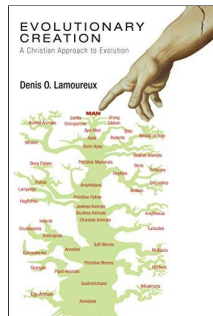
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Are there any mistakes in my book, The Genealogical Adam and Eve?

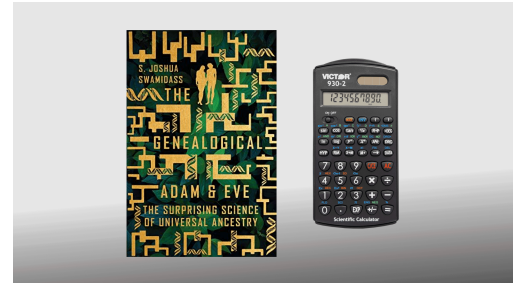
In any expansive book covering so many disciplines, we should expect there are mistakes. So I established a policy and plan to make corrections to any mistakes that were discovered.

For me, this is a matter of integrity and trust. I want my book to be a strong foundation for other academics, and I did not want it to mislead lay readers. When I've seen mistakes in the work of other scientists engaging the public, I want these mistakes to be transparently corrected. I need to hold myself to the same standard.

We recieved several reports of typos, of course, but also some more significant errors. All these mistakes were reported in an erratum, and updated on every few months. The last report was around January 2021. Since then no more reports have come in.



Denis Lamoureux is a biologist and a theologian. He is best known for reviving the term “evolutionary creation” in 2008, with his book by the same name.



The Last Mistake?

The last mistake we found was reported by Denis Lamoureux, a leading evolutionary creationist. That was about 1.5 years ago.

Denis was working through the book, trying to understand of the science, working out the math for himself. He does not think Adam and Eve are real, but he did want to get the science right. It is in that effort that he found a mistake.

At the time, I acknowledge the mistake in a forum thread, redid my math, and added the change to the erratum.

So, what was the mistake? On p. 47,

...about thirty-five generations. Using a generation time of twenty-five years, that is less than 900 years ago.

This text indicates that the computations are using a generation time of 25 years here. But later on, the text states

For example, there are about **160** generations between 10,000 and 5,000 years ago. Naively (and falsely) assuming there is no overlap in our family trees, we can compute the number of ancestors alive 10,000 years ago from the population at 5,000 years ago, 18 million people; we arrive at about 2.6×10^{55} ancestors. This is more ancestors than the number of stars in the visible universe. However, there were just 2 million people alive 10,000 years ago. How is this possible? The ratio between these numbers is 1.3×10^{49} . This is how many times ancestors at 10,000 years are being double counted in this naive calculation, and it is an astronomical number of times.

The problem:

$$5,000/25 \neq 160 \text{ generations,}$$

It turns out that a generation time of **30** was used for the calculations in this paragraph, which yields **167** generations in **5,000** years. A generation time of **30** is not technically incorrect. It is a perfectly reasonable generation time to use. But the text only discusses a generation time of **25**, so this is a real mistake.

The fix is straightforward.

For example, there are about **200** generations between 10,000 and 5,000 years ago. Naively (and falsely) assuming there is no overlap in our family trees, we can compute the number of ancestors alive 10,000 years ago from the population at 5,000 years ago, 18 million people; we arrive at about 2.9×10^{67} ancestors. This is more

ancestors than the number of stars in the visible universe. However, there were just 2 million people alive 10,000 years ago. How is this possible? The ratio between the estimated and known population is 1.5×10^{61} . This is how many times ancestors at 10,000 years are being double counted in this naive calculation, and it is an astronomical number of times.

The point of this paragraph is not changed in any way. But leaving this mistake uncorrected would be equivalent to leaving uncorrected a mistake in the answer key to a math textbook. The textbook's instruction on arithmetic would still be technically correct, but the incorrect answers would confuse students no end.

This correction really must be made. It was a very difficult to find mistake, I am very thankful to Denis for finding it, and I am not sure it would have been found without him.

References

S. Joshua Swamidass. The Genealogical Adam and Eve: The Surprising Science of Universal Ancestry. InterVarsity Press, 2019.

Denis Lamoureux. Evolutionary Creation: A Christian Approach to Evolution. Wipf & Stock, 2008.

Still Taking Error Reports

January 2021 was just in time to give the erratum to the publisher, so they could make corrections to the paperback version of the book. The hardback is now out of print. So, perhaps there are no substantive mistakes in my book any more! Regardless, the erratum will always be available on our website, a record of what mistakes were made and who identified them. There are still old copies of my book still in circulation too, so the erratum will be helpful for many years to come.

It was more than a year ago that I last received an error report. So maybe the book has a clean bill of health now?

Though, more mistakes might still be found. Certainly let me know if you find one.

S. Joshua Swamidass. BioLogos Deletes an Article, Peaceful Science, 2021. <https://doi.org/10.54739/rv8k>