

The Tale of Two Myths

This article we will discuss a subject near and dear to every mother: math, statistics, and numbers. This is your favorite subject, right? To start, I have a few questions for you.

What is the average gestational period for a new born baby?	40 weeks
What is the average weight of a new born baby?	7.7 pounds
What is the average labor for a first time delivery?	13.5 hours

You knew the answer to all of these math questions. Right? See - math **IS** your favorite subject.

Now, I have a few more questions for you. How many of you mothers have ever had a gestational period of exactly 40 weeks? A baby that weighed exactly 7.7 pounds? A first time labor that lasted 13.5 hours? Probably none of you. Right? Suggesting that any specific pregnancy would conform to these statistics would be a myth. How many of you have ever had results that were more than 10% off? 20% off? 50% off??? Probably most of you! My wife has delivered between 36 and 43 weeks. Our six babies have ranged from 6.0 pounds to 10.7 pounds. And her labors ranged from 4.5 hours to 27. So what good are statistics? These statistics are just like psychology and public school systems. Collectively, the statistics always work, but individually, they never work. Why do we discipline our different children in different manners? Well, one reason is because they are all individuals. Not one of them is a collective statistic. And neither are yours! (Oops, there I go; off on a tangent again.)

The tale of our second myth pertains to the use of carbon-14 for dating artefacts. This is a natural decay scheme used to date organic artefacts. This month's discussion has been inspired by my daughter's completion of her high school research paper entitled "The Misconceptions of Carbon-14 Dating." It is an excellent overview of the entire process.

This article takes issue with one point only, the notion that "half life" is a constant (unchanging). The half life of Carbon-14 is believed to be 5730 years. BUT, like the new born baby above, this statistic only works with large numbers of samples. If I took twenty samples each with ten atoms, I could have half lives of 5,000 years, 6,000 years, 10,000 years, or 10 seconds! A sample of ten atoms is too small to provide any meaningful results. Fortunately, 1 gram of pure carbon contains 50,000,000,000 (50 billion) carbon-14 atoms. That is a very large statistical sample. If it weren't for this extremely large sample, the "5730 year" statistic would be totally meaningless.

But let's look at a few more numbers. In my previous occupation (you've read several stories from that experience) we regularly purchased a highly special steel tubing with an outside diameter of $1.44" \pm .01"$ and an inside diameter of $.63" \pm .01"$. We usually purchased between 2000 and 2500 feet per order. (For you mechanical engineers; NO, this tube cannot be made by normal processes. The wall thickness is much too great to be made in this small of a diameter.)

Suppose we found a new vendor. Naturally, we would ask about his inspection process. Suppose he informed us that his normal quality control procedure would test the measurements of his shipment in 1000 different places! WOW!!! Well suppose we purchase a 100' long sample and when we receive it, the outside diameter is off by $\pm .10"$ instead of the $\pm .01"$ as specified, and the inside

diameter is just as bad. (The key word here is, “suppose.” This situation would never really happen!) Did he lie? No, he took all 1000 QC measurements in a section of the tubing that was only 1" long!!! Now I have to ask you, would anyone in their right mind assume that measurements in 1" of a product will be representative of the entire 100 feet?! No matter how many measurements were taken in this 1" section, no sane person on earth would assume that the rest of the 100 feet of tubing would fall within this ± 0.01 " tolerance! We know the manufacturing process has room for numerous sources of error.

So what does this steel tubing have to do with carbon-14 dating? Is my illustration unjust or inappropriate? Well, the 5730 year half life of carbon-14 was established 39 years ago. The test is said to be able to date artefacts 50,000 years old. 39 years divided by 50,000 years is about 0.08%! 1" out of 100' is .08%! The proportions are exactly the same. No matter how many times we have measured the half life of carbon-14 in the past 39 years, it only represents .08% of 50,000 years!!! Furthermore, we understand the manufacturing process of the steel tubing, and therefore, the potential variations. We have very little understanding of the natural decay process of radioactive isotopes and therefore, no idea how variation could occur! BUT we know for a fact that the decay time of any one atom could be anything!

But why stop here with our illustration. Let's stretch it a little further. Carbon-14 can only be used on organic substances. Fossils are rocks, which are not organic. Fossils are also sedimentary rocks which cannot be dated at all. But that's beside the point. Let's investigate the “millions of years” scenario that evolutionists use to date the age of the earth and igneous rocks above or below a fossil. Supposedly, uranium-238 has a half life of 4.5 billion years, and rubidium-87 has a half life of 47 billion years. These are two of the most common methods used to date the age of rocks. We've been measuring radioactive decay for 39 years. 39 years out of 4.5 billion and 47 billion! Hold on...my calculator just ran out of zeros. Ah, now I have it. That's like buying 1,800 to 19,000 **miles** of steel tubing, but only testing 1 **inch** of it!!! Folks, no one, after giving these numbers any serious consideration, would dare give radioactive dating methods any credibility! Still not convinced? Just ask a mother - any mother - what she thinks! She can tell you by experience!

Between starting this article and completing it, I have been asked several questions about this analogy. (After all, it runs against the flow. “Everyone considers a half life to be constant,” they say.) I have several comments in that regard.

- 1) The “law” that states that half lives are constant is based on an observable phenomenon of half lives short enough to actually measure. It may be “logical” that if some half lives are constant, that all are. But this is a “logical assumption” only.
- 2) The nuclei of isotopes with half lives in the millions or billions of years are clearly substantially different from those with short measurable half lives. Thus, this “assumption” is questionable.
- 3) Although measurements CAN be made to verify that these isotopes do, in fact, currently follow this “law,” it is not possible, nor will it ever be possible, to measure the decay for a long enough period of time to confirm that the decay rate is in fact constant. This is the purpose of my illustration of the 1" in 1800 to 19,000 miles.
- 4) IF a nuclear principle existed that would explain why the decay rates of isotopes with millions or billions of years should follow the same rules as those with measurable half lives of

seconds, minutes, or days, THEN we could say the “law” applies to these isotopes as well. I assumed that a principle existed. However, in looking through three of my college nuclear physics books, I was shocked to find no reference to any such principle. In fact, one confirms that these million and billion year half lives cannot be measured. They can only be calculated based on mass and decay events and the assumption that the half life is constant.

- 5) I was asked, “Can you prove the half life is NOT constant?” I must respond, “That’s not my responsibility.” I did not make the claim. I am questioning the claim. It is up to those that make a claim to defend it.
- 6) It is true that brilliant non-evolutionist scientists such as Bohr, and Oppenheimer, have accepted the assumption that all half lives are constant. And for the purposes of their work, over such minute time periods, the half lives of these million and billion year isotopes may very well have appeared “constant.” But, this time of observation is still much too short to verify the principle, AND, just because well meaning people (including myself) say something, this doesn’t make it true; regardless of how brilliant they may be.
- 7) Lastly, I do not stand alone. There are numerous other well meaning, brilliant people, that also question this assumption. The Institute for Creation Research is involved in an international research project called RATE (Radioisotopes and the Age of the Earth). This group of scientists, accepting that the Bible is true, is studying ALL of the assumptions used to date “million and billion year old” rocks, including the notion that a half life is always constant.

Perhaps the best way to summarize would be this. If someone tells you that your baby will be delivered in exactly 40 weeks, weigh exactly 7.7 pounds, and your labor will last exactly 13.5 hours - Don’t believe them. It’s only a myth.

O Timothy, keep that which is committed to thy trust, avoiding profane and vain babblings, and oppositions of science falsely so called. 1 Tim 6:20

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