

# Why the Lamanite-DNA Question is Irrelevant (and why this means you should believe in evolution)

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<http://sciencebysteve.net/?p=41>

I find the Lamanite-DNA question, like, sooo boring.

Consider this : You are only related to your children by half. They only share a half of your DNA. Your grandchildren, half of that again or about a fourth. You lose your genetic contribution to the future at a rate of about  $2^{-N}$  where N is the Nth generation down your line of descendants. So after about 25 generations, or around 625 years, your contribution is only about 1/33,000,000. Because our DNA has about 3,000,000,000 base pairs, and only 0.1% of that varies among humans (the rest are the exact same sequences (which is why we all sort of look alike)). This implies that you will have descendants with no detectable signature of your varying DNA. In population genetic science, this is related to what they call 'coalescent theory' in which genes from previous generations become identical by descent. Meaning that if you go very far back into the past at all, the people (or organism of any kind) with that particular gene, got it from the same ancestor. But much of that DNA gets lost rather than passed on. Lots and lots of your real ancestors don't make much of a contribution genetically to you at all. Entire villages of your ancestors have disappeared from contributing to your varying DNA.

In Mitochondrial DNA it's worse. You are looking at a single line of your many branching tree of ancestors. Go look at your genealogy chart hanging there on the wall of your frontroom, trace back your mother's mother's mother's . . . etc. How many of those branches in the big branching tree of your ancestors are missing from that line? Hello, all but one.

Bottom line: a very small population of your actual ancestors give you the DNA you've ended up with, and its signature. So there could be loads of people descended from Lamanites without a lick of their DNA.

Population genetics can never touch the absence of a DNA as evidence. If they find some fine, but that they don't is not really a big surprise. The Book of Mormon is ever, and always will be, safe from claims about the expectation of finding certain kinds of DNA signatures in a population. This is not a sampling problem, even if we sample every human alive, we still don't know what's missing, only what has survived a massive selection process. The fact is, most of your ancestors' DNA aren't present in your genome. As pointed out above after a few generations your contribution to a decedent's DNA is minuscule, but that does not make you any less their ancestor. (Now this actually gets a little complicated, because in finite populations there loads of ways that inbreeding complicates this process as your DNA loops among your decedents marrying each other, but the basic concepts hold. But I am not dealing with that complexity in this blog.

Most of the people working in population genetics are studying the DNA actually present in populations of organisms and are not thinking about what's missing, hence all the talk about haplotypes in the apologetic's (and non's) literature. I'm talking about what's not there. (I once tried to get funding from BYU to explore this missing DNA stuff because I can do computer simulations (which is what I do scientifically) of this process and put a number on just how large of a population can disappear in this way. This is a great scientific question and not just apologetics. But no one would fund it here, so I'm here in Vienna doing Tsetse fly population genetics—Maybe after I retire.)

Anyway in Southerton's parlance (Losing a Lost Tribe: Native Americans, DNA, and the Mormon Church by Simon G. Southerton), losing a lost tribe just isn't that hard. (Technical note for those who care: I'm not making a small population argument—for example, the argument that Lehi's genetic signature was swamped because it was small, or that it was the result of a bottle neck. I'm arguing

from a [Galton-Watson](#) stochastic branching process theory perspective, i.e. that the long-term probability of any DNA sequence being represented in a distant descendent is zero).

Now here is my real punch. You see this space for Lamanites requires the [Limited Geography Model](#) (LGM)—the idea that there were other human migrations to the America than Lehi's and the Jaredite's. The DNA Lamanite criticisms have been dealt with aplomb by a number of faithful geneticists (See some of the FAIR stuff from BYU's Whiting and McClellan et al.) so Southerton repeatedly cues in on the claim that we members can't credential the LGM because Joseph Smith said that all of the Americas were covered top to bottom with only Lehi's descendents. If we believe in him at all, we have to believe, like he did, that the entire Native American population came out of these migrations alone. He also quotes prophet after prophet, apostle after apostle, who honestly and quite sincerely believed that all of the Americas were covered head to foot with Lamanties. Those are the only peoples that lived here (here being America—I'm in Vienna so by 'here' I mean 'there'). But they were wrong apparently. Should we be surprised? Surprised that Apostles and Prophets are children of their times? That they assumed unscientific population genetics (which was just being developed by Fisher and Wright in the 30's and 40's?). Heavens no.

Now, if you have been reading this blog at all, you know where this is going. Those who quote endless strings of anti-evolution statements from the general authorities are using the same tactic as the DNA-disproves-Lamanites crowd in dismissing the Book of Mormon. To make his DNA argument stick, Southerton, has to say it's impossible to believe in Joseph Smith (or others) and not accept that the Book of Mormon implies only Lehi's immigration came to the Americas. Southerton demands that we have to take everything the Apostles and Prophets say about the American Indians as literal or we don't believe that they are divinely inspired. That's just not the case. We can look at the science of the day and see that they were mistaken and, despite not taking their science at face value, take nothing away from their mantle as God's servants.

Joseph Smith and Brigham Young, typical of people from their time, thought that the moon was inhabited by an agrarian society—something along the lines of lunar Quakers. (Of course, we know about this belief only from third-hand accounts, but being a scientist I believe that third-hand is as good as hearing it yourself, so I believe they believed it. (Plus, my belief in DNA as the carrier of genetic information is really only third hand too, so there you go)). It was not uncommon in the late 19th century to find patriarchal blessings promising that people would preach the gospel to the inhabitants of the moon. No surprise really, many people at the time thought such a thing was, not only possible, but quite likely. Sort like a belief in Bigfoot today. Consider, the words of 17th century French popularizer of the idea of other inhabited worlds, Bernard le Bovier de Fontenelle:

“When I say to you that that the moon is inhabited, you picture to yourself men made like us, and if you're a bit of a theologian, you're instantly full of qualms. The descendants of Adam have not spread to the moon, nor sent colonies there. Therefore the men in the moon are not sons of Adam. Well, it would be embarrassing to theology if there were men anywhere not descended from him, it's not necessary to say any more about it; All imaginable difficulties boil down to that, and the terms that must be employed in any longer explication are too serious and dignified to be placed in a book as unserious as this. Perhaps I could respond soundly enough if I undertook it, but certainly I have no need to respond. It rests entirely upon the men in the moon, but it's you who are putting men on the moon. I put no men there at all: I put inhabitants there who are not like men in any way.”

#### [Bernard le Bovier de Fontenelle](#)

What a delightful fellow. Joseph Smith's opinion was like that of one of many of his contemporaries. It wasn't well-grounded scientific thinking, even given the science of the times, (Oh don't go stamping your foot and saying John Herschel the famous astronomer believed in moon people, true enough, but he was going against majority opinion, it's kind of like quoting Patrick J. Michaels to support the fallacy that most scientists don't believe in global warming (and not believing in human caused

climate change today is analogous to believing in moon men in the nineteenth century)), but it's not surprising. The folks at many of the world's observatories at the time could have given a much better take on the moon. But so what if the prophet of the restoration was not all that scientifically informed when it comes to the moon, (This despite Widtsoe's Joseph Smith as a Scientist), or population genetics, or evolution? That was not his calling. He was called to bring about the Restoration, not investigate the natural world. Leave that to Darwin. [Now there's a big mistake.]

"Gasp and Horrors," some so-called defenders of the faith will cry. "You found a fault with the prophet! You are claiming he was not a scientist!" Get over it. It turns out he wasn't. [And such the advantage!] He had complex beliefs informed by his time and culture. Like me. Like you. Like all humans. And guess what? There is nothing wrong with being a child of your times. If that's a fault I don't know anyone that has escaped it.

And besides Joseph F[ielding]. Smith said it better:

It makes no difference what is written or what anyone has said, if what has been said is in conflict with what the Lord has revealed, we can set it aside. My words, and the teachings of any other member of the Church, high or low, if they do not square with the revelations, we need not accept them. Let us have this matter clear. We have accepted the four standard works as the measuring yardsticks, or balances, by which we measure every man's doctrine. You cannot accept the books written by the authorities of the Church as standards in doctrine, only in so far as they accord with the revealed word in the standard works. ( Doctrines of Salvation 3:203)

And dare I paraphrase, "if what has been said is conflict with the facts, we can set it aside.' [And what determines what "facts" are?]

I recognize this is a slippery slope, but sometimes, especially if you are a roofer, you have to navigate slippery slopes. Here is some advice for such a 'roofer'. There is something right about the late evolutionary biologist, Steven Jay Gould's take that religion and science are different 'Nonoverlapping Magisteria' They have different roles—and each is very good at what they do. 'Good fences make good neighbors,' says the poet. Let's walk down the side and mend the fence rather than squabble about which tree the wall should go around. When it comes to ethics, morality, and spirituality, the prophets and apostles are where to go. When it comes to the brut facts of the world, that's science's domain. [And how often has science, so called, had to change its mind about the facts of the world?] Not that there are no overlaps, mind you, but it is a nice rule of thumb.