

Descended from Jesus? Do the math [HOME EDITION]

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DOES JESUS have a secret line of descendants who are living today? It's an oddly appealing idea. We tend to think of ancestry in terms of bloodlines, in which some individuals are descended from famous ancestors and others are not. And the idea echoes deeper religious themes of individuals and groups favored by God.

But this is one idea in "The Da Vinci Code," which opens today in theaters worldwide, that just won't wash. Jesus couldn't have just a few descendants living today. If anyone alive today is descended from Jesus, then so are most of the people on the planet.

This absurd-sounding statement is an inevitable consequence of the workings of ancestry. People may have just a few descendants in the two or three generations after they lived, but after that the number of descendants explodes. For a population to remain the same size, every adult has to have an average of two children who grow to adulthood and have children. So the number of descendants for the average person grows exponentially -- two children, four grandchildren, eight great-grandchildren, and so on. In just 10 generations -- roughly 250 years -- an average person can have more than 1,000 descendants.

Of course, no one is average. Some people have lots of children; some have none. But over time the fecund and the barren balance each other out. Also, a person's descendants eventually start having children with each other. That slows the rate of growth of a person's descendants, but usually not much, at least in the short term.

It's virtually impossible to "manage" a genealogical lineage so that a person has a limited number of descendants. The lineage would quickly go extinct in the occasional generation in which all of a person's descendants do not have children (or their children die). And a managed lineage inevitably would "leak" -- someone would begin having children at a normal pace, and the usual process of growth would commence.

In real genealogies, a person's descendants either peter out within a few generations or begin to grow exponentially. That's why people who came to America on the Mayflower now have thousands of descendants. People who lived just a few centuries earlier have many millions of descendants.

The same observations would apply to Jesus, although we'll never know if he really had children. But let's assume that he did, and that he also had a lower than average number of descendants -- say 500 in the year AD 250. Where would they have lived? Those centuries were a time of great ferment in the Roman Empire. Although most of Jesus' descendants probably would have lived

in the Middle East, at least a few would have moved as far away as modern-day Italy and central Asia (whether as soldiers, traders or slaves).

Many of these individuals also would have had 500 to 1,000 descendants 250 years later. And these tens of thousands of descendants of Jesus likely would have been scattered along trade routes from western Europe to southern Africa to eastern Asia. After another 250 years, Jesus would have had millions of descendants. Repeat that cycle five more times and the whole world begins to fill up with descendants of Jesus.

Essentially, whether you have descendants is an all-or-nothing proposition in the long run, as two coauthors and I showed in an article in the scientific journal *Nature* a couple of years ago. If a person has four or five grandchildren, that person will almost certainly be an ancestor of the entire world population two or three millenniums from now. And if a person lived longer than two or three millenniums ago, that person is either an ancestor of everyone living today or of no one living today.

The idea that we all could be descended from Jesus takes some getting used to. After all, if we're all descended from Jesus, and Jesus is the son of God, that's a pretty illustrious bloodline. But don't let it go to your head. You're also descended from Pontius Pilate and Judas, as long as they produced the requisite four or five grandchildren.

We're all descended from beggars and kings, judges and murderers, merchants and slaves. We're caught up in webs of ancestry -- a big, tangled, sometimes dysfunctional family.

Credit: STEVE OLSON is the author of "Mapping Human History: Genes, Race, and Our Common Origins."

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