

## Why did God make tapeworms?

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The Biblical story is relatively open to interpretation, too, especially with respect to time, and is even more open to interpretation when one considers life forms that we now know exist but are not specifically mentioned in Genesis. Thus there is a lot of wiggle room for people who want to use the Genesis story for various reasons and in various ways, and depending on how the story is interpreted, some fairly heavy theological issues surface. To illustrate some of the problems involved in understanding special creation, we might consider the group of parasites known as tapeworms. It takes very little knowledge of zoology to realize that any answer to the question of *when* God made tapeworms—that is, before or after their hosts—leads inevitably to an interesting theological discussion because quite different post-creation events must occur to explain these parasites' continued existence, depending on when they were supposedly made. Genesis 1:20-25 deals with the world's fauna, so we could infer that tapeworms were included in the categories listed ("every living creature that moves"), or were simply included with, and within, the larger animals mentioned, such as birds and cattle.

All tapeworms are obligate parasites; they do not survive outside of their hosts, except as eggs passed in host feces. Therefore, if God made tapeworms *before* He made their hosts such as the birds and cattle specifically mentioned, then those worms must have been either free-living or something we would not recognize as tapeworms. If they were unrecognizable as tapeworms, then that means they were changed into tapeworms by some mechanism not mentioned in the Bible, and because we're discussing creation instead of evolution, that mechanism has to involve a decision by God to transform an existing, free-living, worm (we suppose it was a worm) into a new kind of worm, this one a parasitic, segmented, hermaphroditic, egg-producing machine dependent on its host's defecation for survival as a species. In other words, if we do not allow evolution to create a tapeworm from a free-living ancestor, then we must allow God to accomplish exactly the same thing as evolution evidently accomplished, although for some mysterious supernatural reason. If God created tapeworms anew *after* He created their hosts, however, and furthermore, created them in their present form, then He purposefully made a parasitic, segmented, hermaphroditic, egg-producing machine dependent not only on its bird or cattle host's defecation for survival, but also on the eating of tapeworm eggs (= eating of host feces) by various invertebrates such as beetles in which infective larvae could develop.

As if the timing of tapeworm origin were not enough of a theological problem, the *reason* why God made tapeworms compounds the difficulty of rationalizing their existence. It's difficult to seriously discuss why God made tapeworms because such a discussion quickly becomes an exercise in creativity, carrying with it a strong dose of smart-aleck cynicism. What was God thinking when He made these parasites? What was His intent? What purpose did God have for such a creation? But let's do the exercise because it's a fairly instructive one in terms of what we might call "creationism theory," although it involves an attempt to read the mind of God, an activity some religions consider blasphemous and probably most consider impossible. Nevertheless, let's try to answer these questions, beginning with the idea of a tapeworm in the mind of God, remembering, of course, that we could do these exact same thought experiments with any of the 100,000 species of molluscs, the 400,000 species of beetles, the untold thousands of roundworm species, and just to include plants, poison ivy.

I'll admit that reading God's mind is about as easy as reading your next door neighbor's mind. That is, it is virtually impossible. But, to explain the existence of tapeworms, we need to give it a try. Thus we might begin by asking the question: given everything we know about life on Earth, why should God have made a tapeworm? Before we can address this question seriously, however, we need to understand that God didn't make just "a tapeworm;" no, God made hundreds if not thousands of species of tapeworms and put them into sharks, bony fish, amphibians, reptiles, birds, and mammals, including humans. And He made these various tapeworms highly diverse, structurally speaking, with numbers of testes ranging from one or two to dozens if not hundreds and uteri that could be sacs, or networks of tubes, or even containers that grow in place of the first uterus. But God evidently had the most fun with tapeworm "heads," producing made different kinds with suckers, crowns of hooks, tiny hooks on suckers, and glands. He also created tapeworms of a wide range of sizes, from tiny ones less than an inch long to veritable giants, many yards long. Some of the former He put into dogs and wolves, but the really big ones went into really big animals such as whales.

So what was God thinking when He made tapeworms? The first and most logical answer to this question is: God wanted some device for keeping some of his most intelligent, curious, insightful, and creative humans occupied for their entire lives. He knew, because He was God, that intelligent, curious, insightful, and creative humans come up with all kinds of blasphemous thoughts, and furthermore, are not always big fans of organized religion. So He needed a way to involve these minds in some activity that prevented their intelligence and creativity from being applied to other activities such as war, especially war conducted in His name. We have some historical precedence for assuming that God made things to fool humans into harmless behaviors, perhaps the best ones being fossils, which keep lots of people occupied, for example, paleontologists with science, or bloggers with arguing about evolution and creation instead of killing one another or running for public office so they can do public damage because of their willful ignorance. Tapeworms are better than fossils in this regard because they are alive; thus their complex life cycles and physiology compound the problems of understanding them and make them all the more attractive for really intelligent people who ought to not be using their brains to build weapons of mass destruction.

So, having figured out what God was thinking when He made tapeworms, or at least coming up with a candidate answer consistent with what we believe God's mindset to be, we can extend His line of thought, in the process addressing His intent and purpose in a more general, theological, manner. It is probably a pretty good bet that God's intent and purpose for making tapeworms was the same as His intent and purpose for making all the rest of nature that we currently know about, or whose existence we can easily infer from what we do know, namely, as a source of truly great mystery and wonder. Having designed humans, even though He'd still not actually built one, God realized what an enormously powerful device would be the brain He had all planned out, and He understood that such powerful information handling devices often took on lives of their own, or at least seemed to do so, thus producing an emergent property we now know as the mind. We can almost hear God saying to Himself: hmmm; if I build this thing like I've actually designed it, then it's going to need something to keep it occupied, and I mean *truly* occupied, with grand, unsolvable mysteries such as why these brains exist at all.

Whereas tapeworms would work fine as divergence from war for a few highly intelligent and secular people, the average person would need much more personal challenges, for example, the problem of where people came from. Also, one usually needs a microscope to study tapeworms, but microscopes were not invented until long after the Garden of Eden was abandoned. So God,

being God, recognized immediately that people were something that other people could easily observe without a microscope, and He also realized that this problem of where people came from could keep people occupied even when they had little or no idea what kind of evidence might be use to solve it. In other words, ignorance was no obstacle when people decided to get into an argument over where people came from.

What God didn't realize, therefore, was that instead of simply keeping people occupied, this problem would let those same people rationalize war as one of the legitimate ways to address the very problem itself. Thus God came to observe that His creation was quite capable of behaving in unexpected ways, which some of these created beings called "free will," and furthermore was capable of convincing itself that God Himself was inspiring such behavior. We can imagine God sitting by His Heavenly picture window, looking out over Heaven, and wondering whether He should have stopped His work with beasts and their tapeworms instead of letting His creativity run rampant to the point of designing some really smart apes.

The mystery gets deeper when we presume that God made tapeworms and put them inside those animals that are mentioned in Genesis, for example, cattle and birds (in the Revised Standard Version), and didn't tell anyone, at least any of the people who ended up writing the Bible several thousand years later. So tapeworms inside birds and cattle could be interpreted as one more game of hide and seek, sort of like fossils. Our observations could then be consistent with some theological conclusions about God's personality, namely, that He's a creative, ingenious, and loving entity who likes to play hide and seek. Alternatively, we could consider Him a wrathful and jealous God trying to punish any creature on Earth stupid enough to not live a clean life by infecting that creature with a worm. We are not legitimately able, however, to consider tapeworms a plague thrown down by a wrathful God because tapeworms in general are not very dangerous and certainly not as capable of social disruption as say, locusts, which most people call grasshoppers.

So what people usually think about tapeworms, that is, that they are nasty and dangerous, is counter to what God knew about tapeworms, which was that in most cases they were pretty benign. In fact, tapeworms are generally so benign that in the vast and overwhelming majority of cases you can't tell whether an animal has one unless you study that animal's feces and find eggs, or kill the animal and cut it up to find the worm itself. In only a couple of instances can you otherwise determine that an animal might have a tapeworm, and with those infections you have to know where the animal has been and what it's been eating, and you also have to look at some feces or, if the tapeworm is a larva, perhaps do a CT (= CAT scan = X-ray computed tomography) scan of the animal's (human's) brain.

So God could easily have made tapeworms simply for His own pleasure. After all, tapeworms are truly amazing and intriguing organisms that have kept some humans (made in God's image) occupied for lifetimes. It's probably too blasphemous, and too speculative, to claim that God didn't really make cattle and birds and all the other "creeping things and beasts" anew, but simply copied them from another planet He'd created a long time ago in a galaxy far, far away, not realizing that in the time since He'd created that other planet, those parasites had evolved from free-living worms that had previously evolved from primitive agglomerations of cells that had previously arisen from some rich soup of organic molecules.

In this scenario, the tapeworms would be an accident resulting from God's laziness and ignorance, His plagiarism, so to speak, but because of our respect for God, we can't consider Him to be lazy or ignorant or a copycat regardless of the fact that we really don't know anything at all about Him. We may *believe* lots of stuff about God, but we really don't *know* anything,

including why He made tapeworms. Given the size of the universe, we also don't know whether God might have made so many planets and populated them with all kinds of plants and animals that He simply lost track of what had happened on them as a result of free will and evolution and thus we now have tapeworms through no fault of anyone, especially God.

In this particular case, instead of laziness and ignorance, decidedly human traits, God might have been up to His eyebrows in administrative tasks and simply didn't have time to check whether there were tapeworms in the beasts he was copying for Earth. This situation is so familiar to most humans, especially those who have ever held administrative positions, that we assume a Supreme Administrator could easily have found Himself in a similar circumstance, and with similar results. So this interpretation of the origin of tapeworms on Earth is consistent enough with the "made in God's image" that it seems almost plausible, or at least not particularly blasphemous. Furthermore, this last explanation allows evolution to occur on other planets, ones we imagine but don't actually know anything about, and such evolution is then outside the domain of American public school education, thus inconsequential, and not worthy of discussion.

As mentioned above, tapeworms are only one group of organisms that present us with a philosophical problem, namely, why they exist. We could have chosen any of hundreds of thousands of known species, or even the estimated several million species yet to be discovered, from bacteria to tiny primates hiding away in the Amazonian jungles. If the only creation we were worried about was that of shelled amebas in the ocean, for example, few if any human beings would care anything at all about their source, or their history. But the only people likely to argue about creation of shelled amebas are strikingly similar to those who might argue about the origin of tapeworms, namely, a bunch of scholarly nerds, probably tenured university professors, with access to laboratories, microscopes, molecular sequencing machines, and computers. So the general rule is that creationism works best as a political weapon when applied only, or at least mainly, to humans, because most humans really don't care very much about the vast majority of other species on Earth, and if you're dubious about that claim, start asking some proverbial people on the street their feelings about the origin of mice and mosquitoes.