Answers in Depth, Vol. 3, (2008), pp. 97–100.
https://assets.answersingenesis.org/doc/articles/aid/v4/why-make-viruses.pdf

Why Did God Make Viruses?

Jean Lightner, Ph.D.

Keywords
DNA, genetics, gene-transfer, virology, virus

There are some fundamental differences in how creationists and evolutionists view life. Biblical creationists believe that God created life according to their kinds with the ability to reproduce and fill the earth.[1] This view includes the concepts that God had purpose in what He created and that it originally was very good.[2]

In contrast, evolutionists view life as all descending from a single common ancestor by chance processes. Evolutionary arguments tend to imply that life isn't really very complex or well designed. For example, 100 years ago a cell was promoted as being nothing more than a blob of protoplasm, implying that it wouldn't be difficult for it to arise by chance. This proved to be wrong; cells are incredibly complex structures.[3,4] At one time evolutionists argued that organs or structures with no known function actually had no function; at the time this included hundreds of organs and structures in the human body. Instead these were believed to be vestiges of evolution. This argument has become rather vestigial itself, as these organs have been found to have function.[5]

Yet, this argument reappeared in genetics. Most of the DNA in our bodies does not code for proteins, so it was labeled "junk DNA" by evolutionists that assumed it has no function. As research continues it is becoming clear that this DNA has numerous essential functions.[6,7] The evolutionary worldview has a dismal track record for anticipating the astounding complexity in life uncovered by scientific research.

If God created everything good and with a purpose, why are there disease-causing bacteria and viruses in the world? It is true that we first learned about bacteria and viruses because of the problems they cause. Bacteria have been studied in considerable detail and are now recognized to be mainly helpful and absolutely essential for life on earth;[8] bacteria that cause disease (which occurred as a result of the Fall) are the exceptions, not the rule. But what about viruses: what purpose could they possibly have?

What is a Virus?

Viruses are a bit of an enigma. They contain DNA or RNA which are found in all living things. This is packaged in a protein coat. Despite this, viruses are not usually considered living because they are not made up of cells and cannot reproduce by themselves. Instead, the virus will inject the DNA or RNA into a living cell, and the cell will make copies of the virus and assemble them so they can spread.[9]

Viruses vary considerably in their ability to cause disease. Many known viruses are not associated with disease at all. Others cause mild symptoms that may often go undetected. Some, like the HIV virus that causes AIDS in people, appear to have come from another species where they do not cause disease. Given our current knowledge of viruses, it is quite reasonable to believe that disease-causing viruses are descended from viruses that were once not harmful.[10] It has been suggested that they have played an important role in maintaining life on earth—somewhat similar to the way bacteria do.[11,12] In fact, they may play a role in solving an intriguing puzzle that faces creationists.

A Creationist Puzzle

The biblical record tells of a global Flood when all created kinds of unclean[13] land animals were reduced to a population of two, the pair that was preserved with Noah on the Ark.[14] After the Flood, these animals reproduced and filled the earth again.[15] Today many of these kinds are represented by whole families. For example, the dog family (Canidae) is believed to represent a created kind.[16] However, this is a very diverse group of animals. There are foxes that are adapted to living in the arctic, and others that live in the desert. There is incredible variety seen in modern domestic dog breeds. Where did all this variety come from? And how could it arise so quickly given that the Flood occurred around 4300 years ago?[17]

The answer to this puzzle is probably quite complex. Some of the variety would have been carried by the pair of animals on the Ark. When parents pass traits on to their offspring, these traits can appear in new combinations in the offspring (Mendelian genetics). Natural selection can weed some existing traits out of a population. However, a close examination reveals that genetic changes have also arisen in this time.[18] Many

of these changes do not appear accidental and do not directly cause disease. For this reason, some creationists have proposed that God "designed animals to be able to undergo genetic mutations which would enable them to adapt to a wide range of environmental challenges while minimizing risk."[19]

Isn't that Evolution?

It is important to recognize that biologists use several distinct definitions for evolution that are often blurred together as if they are synonymous.[20] *Evolution* is sometimes defined as "change in the genetic makeup (or gene frequency) of a population over time." This has been observed; both creationists and evolutionists recognize this as important in building models to help us understand what likely happened in the past. A second definition of *evolution* involves the idea that all life descended from a common ancestor over millions of years through naturalistic processes. This has not been observed. In fact, it is in direct opposition to the testimony God (the eyewitness to creation) gives us in the Bible. The idea that all life has a common ancestor requires the *assumption* that the Bible's history is false, and the *assumption* that changes which do occur could produce the variety of life we see today from a single-celled ancestor.[21]

With regard to the first definition of evolution, creationists and evolutionists differ in the pattern of genetic changes they should expect to see. The creation model predicts that degenerative changes can occur because mankind sinned and brought death into the world.[22] It also predicts that adaptive changes could occur because God cares for His Creation and intends for the earth to be inhabited.[23] Both types of changes have been observed. The fact that some foxes are adapted to live in the arctic while others are adapted to live in the desert fits perfectly with this biblical teaching. While evolutionists accept that these types of changes occur, their model requires that most genetic changes add information to the genome. This pattern has not been observed. Without this pattern they cannot account for the many organs and complex biochemical pathways that exist in animals today.[24] Scientific observations show that there is an overall pattern of decay seen in the genome which is the opposite of what the evolutionary model would predict.[25]

Another difference is the source of the genetic change. Evolutionists assume that random mutations and natural selection can account for the genetic changes that are seen. Since the underlying mechanism is naturalistic, changes were expected to be very slow. Contrary to their expectations, rapid adaptation has been observed,[26,27] and evolutionists have had to adjust their thinking to accept this. Furthermore, detailed studies of the pattern in genetic differences within related animals don't make sense if mutations are assumed to always be essentially random events.[28] Something else is clearly going on here. It appears that God has placed some incredible programming into the genomes of the animals he created, and viruses may play some role in this.

Evidence of Horizontal Gene Transfer

Interestingly, there are some portions of DNA in animals that look like they came from a virus. While some of these were likely originally present in the genome since they have essential functions, others may have been introduced by viruses.[29] A number of years ago, one creationist proposed that horizontal gene flow (genes picked up from somewhere in the environment rather than inherited from parents) may help to explain rapid adaptation and the interesting pattern of DNA in animals. In fact, the author lists thirteen different biological phenomena that might be explained by horizontal gene flow.[30] Since viruses carry genetic material (DNA or RNA), they are the most logical agents to suspect in transferring genes. While horizontal gene transfer would not change the identity of an animal (that is, it would still belong to the same kind), it could rapidly provide a source of genetic variability that allows for rapid adaptation. If this is the case, then viruses were created "good" (as in Genesis 1) with a support role much like bacteria are known to have.

While the evidence is largely circumstantial, further scientific investigation does seem to support these ideas.[31] In fact, a recent *Proceedings of the National Academy of Sciences* article has brought some new information to light. Previous studies had suggested horizontal transfer between closely related species. This study identified a large section of DNA (~2.9 kb) that was approximately 96% identical in a marsupial (opossum), several placentals (mouse, rat, bushbaby, tenrec, and little brown bat), a reptile (anole lizard), and an amphibian (African clawed frog). It was absent from the twenty-seven other animals surveyed (which included human and Jamaican fruit bat). This sequence appears to have been incorporated into an existing functional gene in rats and mice, although its specific function is not yet known.[32] Because of the pattern observed, it appears that horizontal gene transfer was concentrated at some time in the past and perhaps occurred via a DNA virus.[33] Interestingly, several species (anole and opossum) are from Central/South America, several are restricted to Africa (bushbay, tenrec), and the others have a wider geographical distribution.[34] This suggests that the transfer may have occurred early post-Flood or been intercontinental in scope.[35]

Since most scientists are heavily influenced by the evolutionary worldview, they often miss indicators of

purpose. For example, the section of DNA discussed above is a transposon (a type of mobile genetic element or transposable element). After the putative transfer, it was copied and integrated into several different parts of the genome in the various species. This requires that the proper tools (for example, enzymes) be in place so that the section of DNA can be incorporated into the genome initially, then modified and copied appropriately. Given that decay has occurred over time, it is not surprising to creationists that there are examples of transposons where this process doesn't work properly and disease occurs.

Diseases draw attention and research dollars, so the problems associated with transposons have been recognized before the benefits are understood (much like was true of bacteria). Many people still view these mobile genetic elements as "parasitic" or "selfish." However, they are quite widespread in the genome of plants, animals, and man. If their insertion was always purely "random," it seems they should more consistently cause problems in a complex system such as the genome.[36] Therefore, it seems more logical to believe that transposons have purpose and were designed in a way to benefit their possessor.

The Bible explains the Paradox

The biblical view explains an important paradox we see in the world around us. It anticipates the complexity that is constantly being uncovered by scientific research; God is an all-wise Creator and would be expected to use awesome design patterns and programming. It also explains the decay observed because mankind sinned and brought death into the world; the world is now in bondage to decay.[37] This is an exciting time to be a creationist researcher, as the tremendous volume of scientific research is helping to provide answers to questions that have been asked for decades.

Footnotes

1. Genesis 1:21, 22, 24–28.
2. Isaiah 45:18; Genesis 1:31.
3. Wieland, C., 1994. Chemical soup is not your ancestor! *Creation* **16**(2):46–47;
4. Harvard video. *Inner life of a cell*. Retrieved from, http://multimedia.mcb.harvard.edu/media.html
5. DeWitt, D., 2008. Setting the record straight on vestigial organs. *Answers in Depth* **3**:34–36. Retrieved from, http://www.answersingenesis.org/articles/aid/v3/n1/setting-record-straight-vestigial
6. Purdom, G., 2007. "Junk" DNA—past, present, and future, part 1. *Answers in Depth* **2**:105–151. Retrieved from, http://www.answersingenesis.org/articles/aid/v2/n1/junk-dna-part-1
7. Lightner, J., 2008. The smell of change in our understanding of pseudogenes. *Answers in Depth* **3**:80–82. Retrieved from, http://www.answersingenesis.org/articles/aid/v3/n1/smell-of-change-pseudogenes
8. Francis, J., 2008. The matrix. Life's support system. *Answers* **3**(3):42–43, 52-54. Retrieved from, http://www.answersingenesis.org/articles/am/v3/n3/matrix
9. Bergman, J., 1999. Did God make pathogenic viruses? *Technical Journal* **13**(1):115–125. Retrieved from, http://www.answersingenesis.org/tj/v13/i1/viruses.asp
10. Lucas, J.R., and T.C. Wood, 2006. The origin of viral disease: A foray into creationist virology. In, Exploring the history of life: *Proceedings of the fifth BSG conference and occasional papers of the Baraminology Study Group* **8**:13.
11. Francis, J., 2008. The matrix. *Answers* **3**(3):42–43, 52–54. Retrieved from, http://www.answersingenesis.org/articles/am/v3/n3/matrix
12. Bergman, Ref. 9.
13. Unclean animals probably included all non-ruminants. See Leviticus 11; Deuteronomy 14:1–8.
14. Genesis 7.
15. Genesis 8:15–19.
16. Wood, T.C., 2006. The current status of baraminology. *Creation Research Society Quarterly* **43**(3):149–158.
17. Ussher, J., 2003. *The annals of the world*, Pierce, L., and M. (trans. and eds.). Master Books: Green Forest, Arkansas.
18. This is clear because the two animals on the Ark could carry up to four alleles for any one gene. Today there are some genes where considerably more than four alleles exist in animals from the same created kind. Back
19. Lightner, J.K., in press. Karyotypic and allelic diversity in the canid baramin (Canidae). *Journal of Creation* **23**(1).
20. Understanding Evolution. An introduction to evolution. Retrieved from, http://evolution.berkeley.edu/evolibrary/search/topicbrowse2.php?topic_id=41
21. Understanding Evolution, "Misconceptions about Evolution and the Mechanisms of Evolution: Evolution and Religion Are Incompatible." Note how religious beliefs are said to have nothing to do with the real (material) world; this is in stark contrast with the biblical teaching that God, as the Creator of all, is relevant to every aspect of life.
22. Genesis 3.
23. Psalm 147:8, 9; Matthew 6:25–34; Isaiah 45:18.
24. Spetner, L., 1998. *Not by chance!* New York: The Judaica Press.
25. Sanford, J., 2005. *Genetic entropy and the mystery of the genome*. New York: Elim Publishing.

26. Lightner, J.K., 2008. Karyotype variability within the cattle monobaramin. *Answers Research Journal* **1**:77–88. Retrieved from, http://www.answersingenesis.org/articles/arj/v1/n1/karyotype-variability-cattle
27. Lightner, J.K., 2008. Genetics of coat color I: The melanocortin 1 receptor (MC1R). *Answers Research Journal* **1**:109–166. Retrieved from, http://www.answersingenesis.org/articles/arj/v1/n1/coat-color
28. Liu, Y., 2006. Were retroviruses created good? *Answers* **1**(2), bonus content. Retrieved from, http://www.answersingenesis.org/articles/am/v1/n2/were-retroviruses-created-good
29. Lightner, J., 2008. Life: Designed by God to adapt. *Answers in Depth*, **3**:37–39.
30. Wood, T., 2002. The ageing process: Rapid post-Flood intrabaraminic diversification caused by altruisitc genetic elements (AGES). *Origins* **54**.
31. Wood, T., 2003. Perspectives on ageing: A young earth creation diversification model. In, Ivey, R.L. (ed.), *Proceedings of the fifth international conference on creationism*, pp.479–489. Pittsburgh: Creation Science Fellowship.
32. Pace, J.K. II, C. Gilbert, M.S. Clark, and C. Feschotte, 2008. Repeated horizontal transfer of a DNA transposon in mammals and other tetrapods. *Proceedings of the National Academy of Science* **105**(44):17023–17028.
33. The authors are evolutionists who carry in the assumption of common ancestry. Although creationists could argue that some kinds were created with these sequences and others were not, it appears more likely that they result from horizontal gene transfer. Also, the authors used evolutionary assumptions to estimate the time the horizontal transfer occurred (which was essentially the same for all species). When this type of estimate was done with mitochondrial DNA, the estimated mutation rate was significantly off compared to actual measured mutation rates.
Gibbons, A., 1998. Calibrating the mitochondrial clock. *Science* **279**(5347):28–29. Retrieved on October 24, 2008, from, http://www.dnai.org/teacherguide/pdf/reference_romanovs.pdf
34. See comment by Cedric, one of the authors of the *Proceedings of the National Academy of Science* article on Space Invader DNA Jumped Across Mammalian Genomes. Retrieved from, http://scienceblogs.com/notrocketscience/2008/11/space_invader_dna_jumped_across_mammalian_genomes.php
35. The creation model predicts a high concentration of horizontal gene transfer post-Flood as animals were migrating out and filling various ecological niches. There is also a chance that animals on the Ark may have already carried these sequences. Further intrabaraminic comparisons may help to clarify the timing of horizontal gene flow for this particular case.
36. Some accidental insertions may not cause obvious problems because the genome contains a high amount of redundancy. Redundancy is a hallmark of excellent design that militates against system failure. It is also inconsistent with the notion that life arose by chance. Such accidental insertions do, however, contribute to the deterioration of the genome.
37. Romans 8:20–21.