

Teaching Discernment using evolution videos

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We must teach our students to be discerning regarding the claims of evolution. On a near daily basis the world entices them to deny their Creator. We can teach them skills to evaluate evolutionary claims and separate the true parts of evolution from the false parts. A good way of achieving this goal is to expose our students to quality videos that present compelling reasons why the evolutionary claims of millions of years and common descent are true. Then, as a class, we can evaluate the evolutionary claims presented and find those claims are not really compelling.

Bill Nye Video

[grades 5-8] A 2-minute evolution video with creationist commentary has been available on the LSI website since December 2014 and has been used in grades 5-8. In that video Bill Nye explains how evolutionists imagine that hydrogen gas turned into people, over billions of years, all by itself. www.LutheranScience.org/Bill

The Beak of the Finch Video

[grade 5 to adult] A more substantial video is “The Beak of the Finch,”¹ which chronicles forty years of research on finch evolution in the Galápagos Islands. This video is intended for classroom use and can be downloaded and used for educational purposes. A transcript is available and the video is in both English and Spanish. The video is aimed at high school students, but can be used down to 5th grade and also for adult classes. Information and links to this video will be kept updated on the LSI *Evolution Videos* page at www.LutheranScience.org/EvolutionVideos.

¹ “The Origin of Species: The Beak of the Finch,” HHMI BioInteractive, Nov 12, 2013. (accessed 11-10-19; HHMI is the Howard Hughes Medical Institute) <https://www.biointeractive.org/classroom-resources/origin-species-beak-finch>

“The Beak of the Finch” can be used in science or religion class. With this video, we will be teaching both science and apologetics.

This video can be shown and discussed in one forty-minute religion or science class period. It also works well for a one-hour adult Bible class. You can show and discuss the entire sixteen-minute video or any of its four-minute segments.

Concepts Presented

- Certainty based on God’s Word.
- Lesser certainty based on human reason.
- Species and biblical kinds.
- Natural selection within kind.
- Change in traits of a species can happen in one generation.
- How new species can develop naturally, without human involvement.
- “Science does not generate truth, but rather, useful explanations.”²
- Formation of volcanic islands after the flood.
- Barriers keeping species from interbreeding.

Lesson Methodology

Let’s watch this video and work as a class to correct its errors. How might we change the narration so that it conforms to Scripture (so that it conforms to reality)? Amazingly, this entire video can be understood in a way which agrees with Scripture, by simply removing the words “millions of years” in three places. The remaining narration does contain words and phrases that are commonly *associated* with millions of years, but each of those words can be understood in a manner that conforms with Scripture. That aspect leads to some fruitful discussion. Let’s try to rewrite those parts too, for a narration which more clearly reflects the real world.

² Paul Boehlke, “Dinosaurs, God’s Creatures,” *LSI Journal* 32, no. 4 (fall 2018): 12. www.LutheranScience.org/2018fall (accessed 11-10-19)

Resources

In preparation for class, instructors should consider reading the first two articles below and optionally the third. These articles can also be used as references for older students, especially if you are having them write papers about this video.

- “Glossary for The Creationist” on pages 6-8 in the spring 2018 *LSI Journal* (www.LutheranScience.org/2018spring). This article defines the terms “natural selection,” “species,” and “kind.”
- “Natural Selection” on pages 25-31 in the fall 2016 *LSI Journal* (www.LutheranScience.org/2016fall). This article explains how natural selection produces new species within their own kind, and how evolutionists falsely claim that natural selection can also produce new kinds.
- “Evolutionists and Creationists Often Agree —There are many points of agreement on natural selection” on pages 17-32 in the spring 2019 *LSI Journal* (www.LutheranScience.org/2019spring). This article critiques Richard Dawkins’ book, “The Greatest Show on Earth —The Evidence for Evolution.” Dawkins claims that because natural selection can produce change within each biblical kind, that proves natural selection can also produce new biblical kinds. That is also what the “Beak of The Finch” video implicitly claims.

Video Segments

The video has four distinct four-minute sections. I suggest showing and discussing each part individually. Show the first part, then pause the video and discuss it. Next show and discuss the second part and so on. The fourth part, “Breeding Barriers,” can be omitted if required due to time constraints. The provider of this video (HHMI) does not mention that the video has four distinct segments. Following are my names for and descriptions of each segment.

Introduction

3:47 in length; 0:00–3:47; transcript page 1. The video opens with captivating footage showing the diversity of God’s creatures. The theme is announced: “How new species form.” The field researchers are introduced.

Fieldwork Described

3:32 in length; 3:47–7:19; transcript pages 1-2. The Galápagos finch species are introduced and the methodology of the fieldwork data gathering described.

Observing Natural Selection

3:53 in length; 7:19–11:12; transcript pages 2-4. A scarcity of *small* seeds due to an 18-month drought seems to be the reason that average beak size *increased* by four percent in *one* generation. About seven years later, a series of weather events resulted in a scarcity of *larger* seeds. That seems to be the cause of a measurable *decrease* in beak size in *one* generation. These observations are excellent evidence of natural selection in action.

Breeding Barriers

4:07 in length; 11:12–15:19; transcript pages 4-5. It is observed that different mating songs and physical appearance keep the finches from cross-species mating. These are at least two reasons why the Galápagos finches continue to be separate species.

Quotes from “Introduction”

Mystery of mysteries: How new species form.
[1:07–1:12, page 1]

This quote introduces the theme of the video: “How new species form.” Darwin called this the “mystery of mysteries.” Observations presented in this video show natural selection producing change in the Galápagos finch population. The video also advances the claim that one species of finch flew from the mainland to the Galápagos Islands, and that one species diversified into thirteen species through natural selection. That claim does not go against Scripture, as it is change within kind. A creationist is free to use his reason to accept or reject that claim. The

evidence certainly points to the truth of this claim, so it is likely true that the thirteen species of Galápagos finches descended from a single finch species. An *LSI Journal* article on natural selection states,

There are many *species* in most biblical *kinds*. Every *kind* of plant and animal which exists today, or which has gone extinct, was created by God thousands of years ago during the six days of creation. No new *kinds* ever develop. New *species* develop all the time, but always within their own *kind*. ...Natural selection is a significant scientific discovery. It helps us better understand how the biblical *kinds* of plants and animals diversified into so many species. It helps us better understand how the estimated 40,500 *species* of amphibians, birds, mammals, and reptiles alive today could have descended from an estimated 627 *kinds* of those animals on Noah's Ark.³

If your students have not previously been taught this, consider taking extra time to further discuss natural selection, species, and kinds. Upper high school students and adults may wish to investigate something not mentioned in the texts referenced so far: Epigenetics.^{4,5}

These volcanic islands are geologically young. They began rising from the ocean floor less than five million years ago. [2:43–2:56, page 1]

Question: Is there anything wrong in this quote? If so, what is wrong?

Answer: An error is the assertion (or claim) of millions-of-years. (“Geo-

³ Mark Bergemann, “Natural Selection,” *LSI Journal* 30, no. 4 (fall 2016): 31. www.LutheranScience.org/2016fall (accessed 11-10-19)

⁴ “Epigenetics is the study of heritable changes in gene expression (active versus inactive genes) that do not involve changes to the underlying DNA sequence.” “Epigenetics: Fundamentals,” What is Epigenetics, <https://www.whatisepigenetics.com/fundamentals/> (accessed 11-10-19)

⁵ “The molecular basis of evolutionary change is assumed to be genetic variation. However, growing evidence suggests that epigenetic mechanisms, such as DNA methylation, may also be involved in rapid adaptation to new environments.” “Epigenetic variation between urban and rural populations of Darwin's finches,” *BMC Evolutionary Biology*, (accessed 11-10-19) <https://bmcevolbiol.biomedcentral.com/articles/10.1186/s12862-017-1025-9>

logically young” could also be considered wrong. Evolutionists consider five million years to be young next to their claimed 4.5-billion-year age for the earth.)

Question: Why are we certain millions-of-years is wrong?

Answer: We are certain because God reveals in Scripture that the universe and everything in it are only thousands of years old, not millions. The Bible also reveals that God created the universe in six normal length days. The Bible is accurate in everything it says. We can be completely sure of that.

This is in contrast to the much lower level of confidence when we use sources of knowledge other than Scripture. For instance, science is often wrong about things. Previous *LSI Journal* articles put it this way,

Science is often seen as an unbiased producer of truth. In reality, science is neither unbiased nor a producer of truth.⁶

Science does not generate truth, but rather, useful explanations. Our students need to know about how science works. ...Mankind creates explanations and picks and organizes facts to fit the current situation.⁷

Many prominent evolutionists write about science in similar ways, especially regarding the science of evolution.⁸ The theories and laws of science (which are called “facts” of science) are often found to be wrong and are then replaced with new theories, laws, and facts.⁹ That was the case when Newton’s law of gravity was replaced with Einstein’s theory of general relativity as the explanation of gravity. Even the Big Bang was

⁶ Mark Bergemann, “The Nature of Science” *LSI Journal* 33, no. 1 (winter 2019): 7. www.LutheranScience.org/2019winter (accessed 11-10-19)

⁷ Paul Boehlke, “Dinosaurs, God’s Creatures,” *LSI Journal* 32, no. 4 (fall 2018): 12. www.LutheranScience.org/2018fall (accessed 11-10-19)

⁸ For six lengthy quotes see: Mark Bergemann, “The Nature of Science” *LSI Journal* 32, no. 4 (fall 2018): 26-30. www.LutheranScience.org/2018fall (accessed 11-10-19)

⁹ For more on the changing nature of scientific theories, laws, and facts, see: Mark Bergemann, “How Can A Lie Like Evolution Have Scientific Evidence?” *LSI Journal* 29, no. 1 (winter 2015): 3-13. www.LutheranScience.org/2015lie (accessed 11-10-19)

recently questioned in *Scientific American* by three prominent evolutionary physicists who argued that it needed to be replaced with a different theory.¹⁰

Older students may discuss the “geologically young” claim. God reveals there was a planetary flood a few thousand years after creation. We can assume that flood and its aftermath sculpted the surface of the earth, changing it significantly. The Galápagos Islands are islands formed by a volcano, and that probably happened after the Flood, so the Galápagos Islands are probably younger than the earth itself by several thousand years. To evolutionists, the term “geologically young” implies the existence of “deep time” or millions and billions of years.

Question: How might we rewrite these sentences to make them reflect reality?

Suggested rewrite: There are many ways to make this sentence reflect reality. Here is one: “These volcanic islands probably rose from the ocean floor thousands of years ago following the Flood.”

Commentary: The Galápagos Islands are made of cooled volcanic lava. It is reasonable to assume that lava spewing up on the sea floor (magma from inside the earth) accumulated enough height to rise above the sea and create the Galápagos Islands. This probably happened in the years shortly after the Noachian Flood.

At first devoid of life, they now support a modest number of species. [2:56–3:02, page 1]

Question: Is there anything wrong in this quote? If so, what is wrong and why is it wrong?

Answer: Nothing is wrong. The Galápagos Islands are made of cooled volcanic lava. When that lava initially cooled, it would have had no plant

¹⁰ Mark Bergemann, “No Experiment Can Ever Disprove It,” *LSI Journal* 31, no. 2 (spring 2017): 32. www.LutheranScience.org/2017spring (accessed 11-10-19)

or animal life. It is reasonable to assume that all plants and animals on the Galápagos Islands came from the nearby South American continent, sometime after the lava cooled.

In these diverse habitats, the finches have evolved many ways to survive. [3:39–3:47, page 1]

Question: Is there anything wrong in this quote? If so, what is wrong and why is it wrong?

Answer: Although most creationists would object to the word “evolve,” the type of evolution referred to with this sentence is evolution that a creationist can accept as true. The video advances the claim that one species of finch flew from the mainland to the Galápagos Islands, and that single species diversified into thirteen species through natural selection. These thirteen species of finch *evolved* from a common ancestor, a finch. That claim does not go against Scripture, as it is change within kind. A creationist is free to use his reason to accept or reject that claim. The evidence certainly points to the truth of this claim, so it is most likely true that all thirteen species of Galápagos finches descended from a single finch species.

While this is evolution a creationist can accept as true, it would be misleading for a creationist to generally claim that he believes evolution is true. Most people take the words “evolution” and “evolve” to mean that birds descended from dinosaurs and people descended from ape-like creatures. We must always be careful to explain what we mean when using words that imply more than we are saying.

Question: How might we rewrite this sentence to make it more clearly reflect reality?

Suggested rewrite: There are many possibilities. Here is one: “In these diverse habitats, the finch populations changed in many ways to survive.”

Quote from “Fieldwork Described”

The finches look so different that Darwin first mistook them for entirely unrelated kinds of birds. ...Different kinds of finches could have all come from the mainland separately or the finches could have all evolved out there on the islands. [4:37–5:10, page 2]

Question: The word “kind” appears twice in this quote. Does this refer to the biblical “kind”?

Answer: No, it simply means a type or variety. Evolutionists do not recognize the concept of a biblical “*kind*,” nor do they believe there is a barrier between *kinds*.

Comment: Without using the biblical term “*kind*,” the evidence evolutionists often give for their claim that natural selection changed dinosaurs into birds is that natural selection can produce change within each biblical *kind*, and therefore natural selection can also produce new *kinds*. That is exactly what the “Beak of The Finch” video implies. It uses the true parts of evolution as proof that the false parts are also true. Evolutionists claim that 3.5 billion years of natural selection, driven by mutations, produced all of earth’s plants and animals from a bacteria-like common ancestor. They say that the bacteria in your gut is your distant cousin. And yes, evolutionists actually say things like that.

Quotes from “Observing Natural Selection”

The average beak depth was more than four percent larger than the previous generation. Natural selection had changed the average beak size. [CARROLL:] Could you have ever imagined measuring and observing something like this on such a short time scale until you actually did it? [PETER GRANT:] When we started, the answer is no. We could not imagine we would be able to do it. [9:28–9:54, page 3]

Comment: It was once thought that changes in species would take many generations. New research such as this, shows it can and does happen quickly. In this case, in one generation.

But was this a fluke? Or are changes like this happening all the time? ...That year many more finches with small beaks survived, and their offspring inherited smaller beaks. So the selection had swung in the opposite direction, and evolution had occurred as a result. In an amazingly short period of time, the Grants had measured evolution of beak size, not once, but twice, demonstrating that when birds encounter different environments they will change over a very short amount of time. [9:54–11:12, pages 3, 4]

Comment: About seven years after observing a change in finch beak size in a single generation, the Grants observed another single generation change in beak size. Can such rapid changes in species be fairly common? It seems so.

UPDATE: In January 2018, four years after this video was made, the Grants and other researchers were published in a science paper revealing that in their years on Daphne Major, they observed the emergence of a new finch species. A male finch of another species arrived on Daphne Major from another island 62 miles away. That traveler was able to mate with a Daphne Major female and produce offspring. In three generations there was a new species of finch. The science paper reports,

Homoploid hybrid speciation is believed to be a generally slow process extending over hundreds of generations, but, as the present example shows, it can be established in only three generations. Thus, in small islands or island-like settings, it may be easier to achieve than is currently believed.¹¹

¹¹ Sangeet Lamichhaney et al, “Rapid hybrid speciation in Darwin’s finches,” *Science* 359, Issue 6372 (January 12, 2018): 228 (article pdf page 4). <https://science.sciencemag.org/content/359/6372/224> (accessed 11-10-19)

Quotes from “Breeding Barriers”

Over millions of years, changes like these occurring throughout the Galápagos generated all sorts of beak sizes and shapes. ... The most likely scenario is that, two million years ago, a single finch population arrived from the mainland. [11:12–14:08, pages 4-5]

Comment: This quote claims that changes in the Galápagos finch population, over “two million years,” resulted in the great variety of Galápagos finch species. Yet in this video we have learned that significant change in a single generation was observed *twice* in less than ten years. We also discussed the 2018 science paper where the Grants described how they observed a new species of Galápagos finch develop in only three generations. Evolutionists are finding that change in animal populations happens much more quickly than they thought it could happen.

Question: How might we rewrite this sentence to make it reflect reality?

Suggested rewrite: There are many possibilities such as, “The Flood occurred thousands of years ago. Sometime after that, a mating pair of finches arrived on the Galápagos Islands. Changes in their offspring, like the ones the Grants observed, generated all sorts of beak sizes and shapes.”

The Grants have shown that both geography and ecology are keys to the evolution of the Galápagos finches. ...The more diverse the environment, the more opportunities for evolutionary change to produce those new species. [13:47–15:01, pages 4-5]

Question: How might we rewrite this sentence to make it more clearly reflect reality?

Suggested rewrite: There are many possibilities. Here is one: “The Grants have shown that both geography and ecology are keys to changes in the population of the Galápagos finches. ...The more diverse the environ-

ment, the more opportunities for natural processes to produce those new species.”

These unassuming birds still illuminate how the great diversity of life arose and continues to evolve. [15:11-15:19, page 5]

Comment: The video ends with this statement about the Galápagos finches. The makers of this video intend these words to mean that by studying these finches we can learn how 3.5 billion years of natural selection produced all the plants and animals on earth from a bacteria-like common ancestor. A creationist can understand this entire sentence in a way that agrees with Scripture: By studying these finches we can learn how thousands of years of natural selection produced a great diversity of species within each kind from the kinds of plants and animals that survived the Flood.

Videos in The Classroom

The use of videos for classroom teaching has become very popular. When properly employed, videos can increase student motivation.¹² “The Beak of The Finch” is from HHMI BioInteractive. Their website has a large number of videos for classroom use, including 69 evolution videos. Many other sources also have quality evolution videos. Showing evolution videos to our students, and then teaching a Lutheran response, can be of great value. Students can gain skills to evaluate evolutionary claims and separate the true parts of evolution from the false parts. These are valuable skills that can be used throughout their lives.

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¹² Edna Bravo et al., “Video as a new teaching tool to increase student motivation,” Global Engineering Education Conference (EDUCON), IEEE, 2011. www.LutheranScience.org/VideoTool2011 (accessed 11-10-19)