Session 4

A Closer Look at Evolution- The "Leap of Faith"

Introduction

Evolution, as explained and outlined in most textbooks, is grossly oversimplified. Of course, any scientific process will be simplified in a textbook simply because the learners are not advanced enough to understand the process at the professional level. A sixth-grader, for example, can't be expected to understand photosynthesis the way a student in biochemistry does. However, when Evolution is presented in textbooks, the oversimplification has a more profound effect than simplifying for the sake of understanding and education. Often this oversimplification conceals weaknesses, even flaws, in the Theory.

Slide 1

Most proponents of evolution advocate keeping faith and science separate. Usually, the proponent of Evolution is neutral towards the idea of religion; some even profess that Evolution and religion can happily coexist. True, there are a few passionate, outspoken Evolutionist would decry the notion of religion, but in my experience, they are simply the vocal minority.

The concept of faith and science is going beyond the scope of this study. There is much that could be said about it. The point I'd like to make in this session is that the position Evolutionists cling to requires a great deal of faith.

We need to be clear about something. Every scientific theory requires a degree of faith. Perhaps the scientific community does not like the word "faith" because of the implication of religion. But every scientific discipline requires an acceptance of what can't be directly seen or measured. The atomic theory requires a belief in atoms even though we can't directly observe them. Astronomy has constructed models of the solar system and models of galaxies even though we can't directly observe them. In a more common sense, we placed our faith in many things. I do not personally inspect every bridge before I drive over it. I don't inspect the kitchen of every restaurant I visit before eating my dinner.

However, the examples that I have outlined previously can be differentiated from what Evolution demands that I accept. I have reasonable cause to trust a bridge or a restaurant, and they don't require acceptance of something illogical or ridiculous.

Acceptance of Evolution requires the acceptance of certain concepts that stretch the limits of rationality and credibility. Like most scientific theories, acceptance of the Theory reflects a willingness to accept the overarching paradigm.

The following concepts illustrate what Evolution mandates if we are to accept the paradigm of Evolution.

Slide three

The first concept is that of irreducible complexity. This concept was first published by Michael Behe in his work Darwin's Black Box. Basically, the idea is that a complicated system cannot evolve gradually and still function. All the pieces must be in place and fully functional for this system to operate. If a part

is missing, the system will fail. Behe uses an ordinary mousetrap as an example. Essentially, there are five components to ordinary mousetrap- the base, the spring, the locking arm, the bar that actually whacks the mouse, and a trigger. If any of these components is missing, the trap doesn't function. Additionally, these pieces indicate design. They must work together and be assembled correctly to function.

Behe's main point is that many structures and systems in living beings are irreducibly complex and, therefore, could not have evolved. An irreducibly complex system must be entirely in place for the organism to survive; without the system, the organism can't survive, and therefore can't reproduce, halting further evolution.

Slide 4

Here is one example of an irreducibly complex system in humans, that of blood clotting. Understanding the biochemistry is not necessary. The point of the diagram is to show the number of steps involved in blood clotting. Each step is necessary, and the sequence of events is critical. The clotting events ensure that the clot forms only when tissue is damaged, that it forms at the correct location. The clot must be sufficiently large so the organism doesn't bleed out while ensuring that the whole blood supply doesn't clot. Finally, the clot must be degraded at the correct time so blood flow resumes.

Slide 5

Evolution struggles to explain how complexity arises. Some proponents have put forward the ideas that genes can jump onto other regions of chromosomes, or that mutations can cause segments of chromosomes to duplicate. Indeed, these mechanisms have been observed. This jumping could give a possible mechanism for some complexity. However, these mechanisms do not account for the incredible complexity and diversity we observe in living organisms.

To put it into a more real-life scenario, imagine a typical auto-salvage yard. Imagine that we sent a tornado, or possibly thousands of tornadoes through that yard, and when it's over, we have, not a fully functional Ferrari, but a fully functional space shuttle.

Understand that complexity does not disprove Evolution. A mechanism that produces complexity may be discovered. This is one area where Evolution requires a great deal of faith. The complexity is undeniable, yet no mechanism is known which accounts for it. The best that evolutionists can say is, "It must have evolved somehow because here it is."

Slides 6-8

(For reference in discussion questions.)

Slide 10

Natural selection was one of the major themes of Darwin's On the Origin of Species. Darwin spent considerable time demonstrating artificial selection, then postulated that natural selection mimics artificial selection, though much slower and undirected. In a previous segment, I outlined the basics of natural selection. The basics of natural selection are logical. Indeed, we Christians can accept natural selection as being capable of producing species or of conferring adaptations to the species. These phenomena have been observed.

The idea that natural selection can produce different kinds, however, has never been observed and requires a great deal of faith. Here's an illustration.

- I have a recipe for sugar cookies.
- I loan each of you my recipe so you can make copies, by hand. (This is important and I'll tell you why a bit later.) So you scribble away and make your copies.
- Since these copies are hand made, mistakes in copying may occur.
- Nevertheless, each copied recipe is used to make a batch of cookies.
- The cookies are presented to others for another round of copying.
- The recipes are copied. Note that there is never a comparison between any copy and the original. This means that any copying mistakes will likely be passed to future copies.
- As others sample the cookies, they discover a bad batch. This recipe is unlikely to be copied again. Another batch may be better than the rest, so it is likely to get copied more often. The others, not being bad, will also be copied, but not as often as the first. Note that those doing the tasting never see the recipe.
- The cycle continues. Favorable recipes are copied more frequently.

In this way, the sugar cookie evolves.

No analogy is perfect, but I have tried to preserve some important aspects of natural selection:

- You will have, no doubt, picked up on the fact that the recipe corresponds to the genome. The genome carries the genetic information necessary to "make" a living thing.
- The recipes are copied by hand. No photocopiers, scanners or taking pictures with the phone. The genome is replicated a nucleotide at a time; it is not copied all at once.
- Mistakes are made. Geneticists estimate that one nucleotide in one million is mutated every time DNA duplicates.
- Copies are not compared for accuracy. The same is true for replicated DNA from generation to generation.
- The tasters do not have access to the recipe. Natural selection does not read the genome.
- The tasters were not instructed on what constitutes a favorable cookie. Tasters simply indicate a favorable batch by copying the recipe.

So far, all seems reasonable. But now let's take a closer look at some scientific principles that we must apply to our analogy:

- The recipe is written in a language that the copier can't read or understand. Only the baker can. The copier is just reproducing shapes on the paper.
- There is no comparison between the original and the copy.
- The baker does not know the expected outcome of the recipe. She or he simply follows the recipe verbatim and applies no professional experience or knowledge of what is supposed to occur.
- A copying mistake can produce better cookies.

Evolution claims that given enough generations of copying, and enough time, and enough copying mistakes, it is possible to introduce entirely new ingredients into the recipe. And given enough time and

opportunity for selection to work, eventually, the original recipe will evolve into a recipe for chocolate cake, and tuna casserole and eventually a seven-course meal.

Slide 11

Lets's contrast natural selection with artificial selection. We start as before, with our recipe. All of the constraints of the previous illustration are still in place, with the exception of the selection process. This time, the tasters agree on one recipe only, and this is the recipe that gets copied. The rest are discarded. Another round of copying and selecting occurs, and again only one recipe is selected.

There are some significant differences here:

- This is an intelligent process. The tasters select criteria describing the "best" cookie.
- The tasters decide which sample best fits the established criteria.
- The recipe to be copied is deliberately selected; the rest, even though they may contain desirable elements, are deliberately discarded.
- This process will only produce sugar cookies. The sugar cookies may exhibit better qualities than the previous generation, but they will always be sugar cookies.

Slide 12

The analogy we imagined for the previous slides is an illustration of macroevolution. Macroevolution is the process where one kind of creature evolves into another. This is the process that accounts for a primitive single-celled creature giving rise to blue whales, oak trees, and humans. Microevolution is the changes that occur within a kind. Darwin's finches are an example of microevolution. Their beaks are different, which enables the finches to occupy different ecological niches. We Christians have no problem acknowledging that this happens. They remain not just birds, but specifically finches.

Evolution requires a great deal of faith because science has never observed macroevolution happen. We can and do see microevolution happen, but not macroevolution. When evolutionists point to the "overwhelming amount of data" or that "verification is no longer necessary because of the volume of evidence," the evidence or data supports only microevolution. When pressed, the evolutionist will respond by saying something like this: "Of course we can't observe macroevolution. Measurable changes require millions of years, and we don't have millions of years to acquire data. But it must have happened because here it is." This statement is not based on science, but on faith, whether true or false.

Slide 13

This is only a summary. Obviously, much more could be said. This graphic represents what I like to term the evolutionist's "Leap of Faith." The leap from micro- to macroevolution is a huge leap. Once again, these concepts don't necessarily disprove Evolution. We can, however, teach that these are weaknesses in the theory and still requires faith to accept.