Session 9 - Important Science/Philosophy/Faith Terminology

10/24/18

abiogenesis

This is the transition of matter (minerals, molecules, etc.) from non-life to life.
When we talk about abiogenesis, we're talking about non-living matter becoming living. This happening without the intervention of intelligence is counterintuitive and virtually impossible as scientists are finding out more and more.
One of the preeminent synthetic chemists in the entire world, Dr. James Tour, has an open invitation for any chemist to explain to him how this transition from a mix of chemicals to reproducing life might have occurred. He's got no takers.
Atheists want us to believe that a billion years ago some chemicals in a pond somehow came to life by itself.
Synonyms: chemical evolution, Origin of life, Origin Science

agnosticism

As it applies to theism, this term means lack of knowledge of God's existence. This is someone that is between atheism and theism. This is someone that isn't sure, is undecided. They're often open to evidence for or against theism. These people are great candidates for us to invest our time in conversation with.

Anthropic Principle

This is overarching principle to fine-tuning. The universe is wired in a way as to allow for our existence. Things like the organic chemistry of Carbon or the amount of oxygen in the atmosphere that allows fires to start, but doesn't make it too easy for everything to burn up.
One of if not *the* most compelling argument for theism.
There seems to be a reason for this bio-friendly universe. The universe also has unique properties that allow us to observe it and learn an incredible amount about it.

apologetics (already covered)

We've defined apologetics already in our earlier sessions(and it can be described a few different ways). We described it as "a reasoned defense of a position" or in the case of apologetics applied to Christianity, "a reasoned defense of Christianity".
Synonyms and related terms: Defense of the faith, Christian apologetics

atheism (already covered)

The belief that God does not exist. Of course we touch on atheism in many of the mentoring sessions we do. Atheism has some overlap with Naturalism that we'll cover a little later.

Cambrian explosion

This is an event that occurred about 540 million years ago that appears in the fossil record. It's called an explosion because almost all of the current phyla came into existence in this snapshot of time. To give perspective, if the entire 13.7 billion year history of the universe were compressed into a 24 hour day, the Cambrian explosion happened in less than 10 minutes.

common descent

This is the idea that all species came from a single common ancestor. If you're familiar with the tree of life, this would be represent the idea that there was one simple organism that branched out both in diversity and complexity.
There are many difficulties with the idea of common descent such as the limited time allowed, the rarity of beneficial mutations, and how evolution would explain the gradual emergence of entirely different body plans. Not well supported by the scientific evidence.

creationism

If you look at the term alone, literally it would just represent that a person believes that God created life and that there is no completely non-theistic explanation for life. This could leave open the idea of evolution occurring or not occurring, but either way, a creationist would contend that God was involved.

old earth creationism

A theistic perspective (that believes that God created the universe and life within it) that the earth is old (approximately 13.7 billion years). This view would take a non-literal interpretation of time frames referenced in the biblical accounts of creation.
Synonym: OEC

young earth creationism

This is a term for someone that comes from a theistic perspective (that believes that God created the universe and life within it) and believes that the Bible and/or the scientific evidence indicates a young earth, usually in the range of 6,000-10,000 years. This perspective takes a literal view of the days of creation in Genesis chapters one and two. This view virtually eliminates the possibility of evolution occurring the way most evolutionists believe that it did.
Synonym: YEC

Darwinism / natural selection

Think of Darwinism as being the theory that the combination of mutation and natural selection in biology is sufficient to bring about all past and future diversity in life. **Natural selection** is the idea that mutations or variations in offspring will often give them a **survival advantage**. Now we put the word 'natural' in front of selection (natural selection). We're also familiar with **'artificial** selection' and that would be the dynamic we have **when breeders select which specimen to breed** given specific characteristics. So Darwinists would contend that natural selection is doing what breeders would do.

Synonym: Macroevolution, naturalistic evolution

deism (already covered)

We went over deism in our various sessions last year and this year. Deism is the idea that God created the world, but was only involved at the start. Under deism, God created the universe, put the laws of physics and chemistry in place and stepped back. The reason we take any time to bring this up again is because it is often the foundation or motivation for theistic evolution (which we'll talk about further in this session).

determinism

This is the idea that we really don't have control over our actions. Determinism says that our society is dictated by the behavior of **individuals** and individuals are **dictated by biology** and biology is dictated by **genetics** and genetics is dictated by **chemistry** and chemistry is dictated by **physics**. This is a **bottom up view**. Looking at if from the other direction, **physics** dictates **chemistry** which dictates **biology** which dictates an **individual behavior**.

One of the many problems with determinism is that it tells us that **we're really not responsible for our behavior**. We can blame biology and genetics and chemistry and physics.

Epigenetics

There has been a lot of focus in the **last 100 years regarding genetics** and its involvement in the emergence of life and how epigenetics supports or doesn't support evolutionary theory. Epigenetics is a **newer term** that expresses the idea that the **genetic code** itself, the ACTG, from what geneticists now know, is **not enough to fully express the characteristics that a particular life form has**. There's an **additional level of complexity that is somehow above the genetic code** that is involved with the process of the expression of the genetic code. There are at least **five other codes** within the cell that must work in harmony with the genetic code. This makes the non-theistic **evolutionary position even harder to explain** because the **complexity in life is only increasing** the more we know about it. Epigenetics is one of many indications of that so it's a good term to be at least a little familiar with.

fine-tuning (for life)

This has been covered in several RDOF events, some of our mentoring sessions, and we'll touched on it several times even today. It refers to the many specific parameters within physics, chemistry, cosmology, biology and other sciences that seem adjusted with incredible precision in a way that allows life to exist, when in any other scenario life wouldn't exist. This fine tuning doesn't just allow life, it allows advanced life. Advanced life (such as mammals) requires an even higher level of fine tuning since we can't persevere the radiation and temperature and oxygen level ranges that simple unicellular life could.

Fine tuning is an area of science that is making incredible strides in which new fine tuning criteria are identified every year. The case for the fine tuning of both the universe and biological life is more compelling than ever from a scientific, mathematical, and philosophical view. As we've pointed out this is why non-theists have resorted to the multiverse theory, but it's not scientifically supported.

Goldilocks zone

This is a really powerful concept or term because it's very **intuitive** and easy to comprehend. It's another term **related to fine tuning** and the **anthropic principle**. The term **goldilocks zone** refers to a zone or area that allows for life to even exist. A goldilocks zone **wouldn't somehow create life, it just allows it**. One of the most common Goldilocks zones is the **CHZ** or the **Circumstellar Habitable Zone**. This is just the zone that the earth is in that allows for their to be enough warmth from the sun to allow for liquid water and **not so much warmth that the water evaporates**. This of course is going to be related to the distance from our sun. **A little closer** and the lakes and oceans evaporate and the opportunity for life evaporates along with it. If the earth is **a little farther** the surface water freezes.

We've also got several **other types of goldilocks zones** such as the GHZ or the **Galactic Habitable Zone**, our location within the galaxy that shields us from the intense radiation that would wipe us out in an instant in most parts of the galaxy. There are **more than 5 of these types of habitable zones**.

Synonyms: habitable zones, CHZ, GHZ, CHA (Cosmic Habitable Age)

human uniqueness

This term relates to the **controversial idea** that **humans** have some sort of **unique place within the spectrum of life**. From an **atheist perspective**, we've just evolved and we've **not** intuitively got **any more value than your dog or a cockroach**.
From a theistic perspective, we are the **pinnacle of life**, created by God to **rule over** all of the earth. Not to take advantage or exploit the earth, but to be a steward of it. So we've got to decide which makes more sense, **which is** more **intuitive**, and which **corresponds with our experience**, Are humans **uniquely valuable or no more valuable** than each **individual** in that **ant mound in your backyard**. Just another example of **theism making more sense than atheism**. For that reason, **human uniqueness** is an **important concept** not just to understand, but to be able to talk about at least in general terms.

inference to the best explanation

This is a term that represents a **common principle in science**. **Science does not** typically **prove** things beyond any doubt, **it comes to tentative or provisional conclusions**. We can tentatively conclude things scientifically provided that new information doesn't **overturn** a previous conclusion. In science **inferences (not proofs) are made based on the interpretation** of evidence. **Usually** the conclusions may be **correct**, and has stronger evidence than a competing explanation.
Ancient peoples may have thought that the **stars were fixed and rotated around the earth**. Evidence provided a different model of celestial movement. When the evidence was examined the Inference to the Best Explanation dictated that the old scheme was jettisoned and **new explanation prevailed**. We like this term because it represents a common scientifically and philosophically rigorous phenomenon within science and the science/faith/philosophy realm that, of course, supports our position.
Synonym: IBE, abduction

origin of information

This is a topic that is **rising in importance** over the last few decades. The increasing realization that **information has to have a source**. Our uniform and repeated experience both in science and in other disciplines and in life in general is that where ever we see information (whether it is in a book a computer code, a blueprint, a musical score) we always see an intelligence behind it. in the form of specified complexity. So when information is both complex and specific (such as in the DNA code) we only see intelligence as being able to generate that type of thing.
So, given several scientific principles such as the 2nd Law of Thermodynamics, IBE, principle of cause and effect, and others, the origin of complex, specified information is an important topic for us to be able to talk about.

PIP (Put Into Practice)

- Ok, we've gone through 19 terms so far. You've been able to read the basic definitions of these useful terms and you've heard us talk about them.

- If you actually use these terms verbally yourselves, that will solidify them even more and really give you confidence in your ability to integrate them into your vocabulary.

- Go ahead and partner up with someone close by. Have one of you start out by picking a term and asking the other person what that term means.
- Now if you're on the receiving end of that question, **try not to look at your notes** and go from memory. After you've been asked about 3 terms and had a chance to give a two or three sentence response, switch roles and pick a different three terms and ask the other person what that term means.

intelligent design

The term intelligent design could be described as the idea that some things within nature (mostly biological things) are best explained as having been designed by an intelligence.
Intelligent Design (or ID) is a scientifically derived term not just a philosophical term.
ID looks for particular causes of particular phenomenon.
ID looks at two things chance and necessity and in some cases concludes that they're not enough to explain the phenomenon at hand. ID is positive evidence for intelligence in the natural world. This, like irreducible complexity (that we'll cover next) is arrived at not by lack of understanding of a phenomena, but by understanding the scientific principles and probabilities behind the phenomena.

irreducible complexity

The term irreducible complexity refers to the idea that certain systems within biology that are made up of several components couldn't have evolved without the entire system existing at once. They couldn't have added components over time because the components without being complete, wouldn't have conferred any survival advantage. Remember Darwinian evolution is dependent on any variation surviving because it has a survival advantage. So if you have an advantage over other humans because you have the ability to see, in order for that to have developed in a gradual, Darwinian way, each of the stages from no vision to what we have today had to infer an advantage on the creature. Surely this wouldn't be the case until sight was actually attained. Having most, but not all of the components of an eye isn't helpful, it's detrimental.

macroevolution

The word evolution is used in a lot of ways as we saw when we talked about equivocation. Macroevolution would be the idea that organisms change to the degree that one species changes into another one family or genus changes into another, etc. This idea extrapolated is what leads to the concept of universal common descent (that we all evolved from an early, simple organism). This would be the tree of life that you've likely seen. One important point to remember is that macroevolution requires adding to the genetic code; something that's pretty difficult to explain from an atheistic/naturalistic point of view.

microevolution

Microevolution is the idea that successive generations change slightly, but that species are unique and resist significant change. These changes might have to do with environmental conditions like the finches that Darwin observed in which some had different shaped beaks and eventually became predominant in the population. In microevolution you don't have much added information and complexity, or any new novel body plans or functions, just relatively minor changes to the organism.

naturalism

Naturalism, in a sense, would simply be the opposite of supernaturalism. So a naturalist would contend that there is nothing outside of nature. Nothing supernatural. They might believe in consciousness and purpose and human dignity and good and evil and the virtues, but they wouldn't root them in anything related to a God. They often have a hard time justifying these types of intangible things that are so core to who we are as humans.

materialism

Materialism is a little more narrow than even naturalism. Materialism is the idea that everything that exists is material, everything that ***really*** exists is made up of atoms. For the person that calls himself a materialist, there is no such thing as the supernatural because there is nothing outside of nature. They often get around the difficulty of explaining consciousness, purpose, human dignity, good, evil, emotions by saying that they actually don't exist and that they're just illusions or a social construct that has usefulness or utility for us individually or as a society. Thankfully, most people can intuit that these things really do exist.

peppered moth

The peppered moth, like many of the supposed transitional fossils between apes and man turned out to be terrible example of evolution at best and really just a hoax. But the stories are still tossed around, so we want to know enough to refute these types of stories. The peppered moth is a variation on this theme.

As the story goes, during the industrial revolution, the balance of peppered moths that was a mixture of lighter and darker moths began to evolve. The lighter moth population greatly decreased and the darker moths became more prominent. This was supposedly because as the moths landed on the soot-covered tree trunks, the lighter moths now stood out more and were more easily eaten by birds.

This turns out not to be true for several reasons, but the take away that we want to remember is that this was just variation within a population. A trait that already existed just became temporarily more prominent. This is microevolution not macroevolution.

pesticide/ antibiotic resistance

One of the examples of evolution that is often pointed to is simple organisms resistance to pesticides and antibiotics. Don't be fooled by this. There are two major problems. The first is that these are not macroevolution, it's microevolution; small changes. The 2nd problem is that when we take the time to look at the genetics of what's happening, the organisms are not adding any information to the genome, they typically are experiencing a loss of function that just happens to protect them.

prebiotic soup

Prebiotic soup refers to the supposed concoction of chemicals that might have existed hundreds of millions of years ago when life supposedly began.

The narrative that evolutionists would want to put forth is that just the right chemicals at just the right conditions and just the right amounts without any disrupting chemicals (like oxygen) caused life to pop into existence.

Synthetic chemists like James Tour that we talked about give us several reasons why this is way beyond hopeful thinking and closer to pure delusion and an indication that there isn't an understanding of how simple molecules are constructed, much less self-duplicating DNA.

punctuated equilibrium

This is a variation of how evolution occurred. While most evolutionists would contend that life transformed from one species to another gradually, the idea of punctuated equilibrium states that you have these periods of stasis (where a particular life form stays the same) and then all of the sudden there's a mutation and the life form changes, maybe it has feathers when it didn't before or it breathed continuously like a fish does and then suddenly it had enclosed lungs like we do. This idea of PE is very problematic the more scientists learn about genetic mutations and what it would take to actually have such a significant, beneficial mutation. To put forth that this happened over and over countless times and that's the explanation that we're going to go with for life, is really a leap of faith without scientific evidence to back it up. But many would contend that you have to take a position like this to make sense of the fossil record that overwhelmingly indicates species not transitioning, but staying the same.

purpose

This might seem like a strange term to have in a list like we're covering, but it's core to our humanity and materialists and non-theists can't really make any sense of it or explain it, so it's worth discussing. If we as individuals are really just a conglomeration of cells whose actions are dictated by biology that is dictated by chemistry that is, in turn, dictated by physics and the physical laws acting on individual atoms, then there's really no room for 'purpose'. So atheism and naturalism and materialism would say that purpose is non-existant or an illusion. However, we as humans intuit that there is purpose in the world and in our lives, and theism has a coherent, comprehensive, prior explanation of our purpose as humans.

radiometric dating

This typically has to do with the dating of fossils. There are various radioactive isotopes that have exact half lives that scientists can use to date things that used to be alive. There are some limitations to various radiometric dating techniques and there has been a lot of criticism around particular things that seemed to have been assigned a very inaccurate date due to erroneous radiometric dating. RD is often criticised by YEC.

science and religion - conflict theory

I included this here so that we can be aware that there are a few basic theories about the interaction of science and religion. This 'conflict theory' would take the position that science is at odds with religion, that they make different competing claims, that they're at conflict with each other.

science and religion - complementary theory

This is the position that we would hold. This theory comes from the position that science and theology complement each other. That they generally cover different areas, but that where there is overlap, that science is going to point in a direction of theism and that we wouldn't see scientific claims in scripture that are at odds with science.

theistic evolution

This is the position of those that believe that macroevolution occurred, but that God was the cause of it. They could come from the deistic perspective that the laws of physics and chemistry somehow necessitated that evolution would occur necessarily. Or they could come from the perspective that God was involved in the process to some degree.

logical fallacy (already covered)

We covered logical fallacies last spring in session 2 for each of you. You'll remember a logical fallacy is just flawed thinking or flawed reasoning. Whether it's a non sequitur or confirmation bias or a false dilemma, we want to be able to identify that something isn't right in a line of reason. If we can put a label on exactly what is wrong that's even better, but the 1st step is recognizing that something is flawed. Otherwise, we're at the mercy of believing whatever someone else says.

logical fallacy - confirmation bias (already covered)

This is probably the most common and important fallacy in which we tend to see the evidence we want to and overlook or dismiss the evidence that doesn't confirm our position. We won't spend much time on it because, for most of you, we went over it recently. If you have any questions about it, just let us know.

logical fallacy - of equivocation (already covered)

This is probably the most common and important fallacy in which we tend to see the evidence we want to and overlook or dismiss the evidence that doesn't confirm our position. We won't spend much time on it because, for most of you, we went over it recently. If you have any questions about it, just let us know.

logical fallacy - false dilemma (already covered)

This is probably the most common and important fallacy in which we tend to see the evidence we want to and overlook or dismiss the evidence that doesn't confirm our position. We won't spend much time on it because, for most of you, we went over it recently. If you have any questions about it, just let us know. Synonym: This could also be a false mutual exclusivity. Asserting that there two choices can't both be right when in fact they can. Example: Do you believe in science or God?

logical fallacy - straw man argument (already covered)

This is probably the most common and important fallacy in which we tend to see the evidence we want to and overlook or dismiss the evidence that doesn't confirm our position. We won't spend much time on it because, for most of you, we went over it recently. If you have any questions about it, just let us know.

PIP #2

For this PIP, we're going to have you integrate some of this terminology as you answer a question: Say someone said to you something like:

- "**I think evolution is true, what do you think?**"

- You might start off by saying "**That's a really interesting question.**"
- And then clarifying "**What type of evolution do you mean?**" (remember we're always integrating the tactics we learned in our session 3.

- Then you might **differentiate** between **microevolution** (small changes) and **macroevolution** (one species becoming an entirely different one)
- You might make a point about the **increase in information** in the genetic code being **hard to explain** without input or intelligence.
- You might mention the **fossil record** showing not transitions, but stable species
- and you might mention **Inference to the Best Explanation** indicating that an **intelligence** being **involved** as being a easier explanation for you to believe.

Session 2 RMR practical challenge:

Use 6 of these terms in conversation **this week** and **be ready next session to let us know how it went.** It might be with a **friend** or a **family member** or someone you're just getting to know. Just look for the opportunities God gives you.