

## Questions for Lesson 6: The Soft Anthropic Principle

1. Irreducible complexity applies to systems where many components have to all work to allow the system as a whole to function. Give an example in every day life of something like that.

**Answer:** Your car in which all the systems have to work--ignition, fuel, mechanical, etc. A bike--the gears, wheels spokes, tires, etc., all have to be functional. Your body--the heart, lungs, digestive system, electrical system, etc.

2. Nobody would suggest that your car evolved from raw elements by chance. What is the difference between that and biological systems?

**Answer:** The evolutionist would answer that you see no evidence of intermediate forms that were part car and part something else. Later we will see if the biological arguments for the evolution of life are that well supported. If not, then just like the car, intelligence must have been involved. This is the reason we use the atom in our example. No intermediate can be observed or postulated successfully for an intermediate for an atom, or if you have a quantum mechanics approach, for a quark, a string, or a brane (all theoretical building blocks of charge and matter).

3. What is the "anthropic principle?"

**Answer:** Very briefly--it says that chance is not a valid mechanism to explain the complexities seen in the cosmos. We can expand on that to say that conditions happen to be just right for the existence of (intelligent) life on earth today. There are many variations of the anthropic principle, but the basic concept is that conditions are just right for us to be here and they are just right for us to observe that the universe seems to be designed for us to be here.

4. When we have many variables, all critical to the success of an event, what do we do with the probabilities of each variable to get the actual probability of the event?

**Answer:** Multiply. For the cards in a playing deck the odds of each variable (drawing an ace of spades) is 1 in 52. To draw it four times in a row (pre-announced) would be  $1/52 \times 1/52 \times 1/52 \times 1/52 = 1/7,311,616$ .

5. Is anything impossible?

**Answer:** In theoretical terms a person might argue that nothing is impossible by chance given enough time. In practical terms, any event which has a very low probability like 1 in  $10^{60}$  could be called "impossible." If "impossible" has any meaning at all, the earth's creation and intelligent life on it, would certainly fit the definition.

6. If there are enough places in space, would life occur no matter what the probabilities are?

**Answer:** Yes, if the number of places match the probabilities. If you draw from a deck of cards 52 times, you are likely to get the ace. However, in the case of the universe, we are far, far beyond the number of possible stars in space. The odds are on the order of  $10^{700}$  and the maximum possible number of baryons (particles of which

matter is made) is  $10^{78}$ .

7. If a scientist says that he has created life in a test tube, is this in violation of the message of the program?

**Answer:** No. First of all, they would be using materials already created and already in a finished form. They would also have a controlled environment manipulated in a way not possibly found in nature.

8. Does this program prove that there is no life in outer space?

**Answer:** No, but if there is life in outer space, God created it.

9. How does the existence of God answer the anthropic principle?

**Answer:** If intelligence, order, and planning are admitted to have been a part of the creation process, then chance is not being proposed. God, then, engineered the right values for the physical constants and arranges the right conditions to sustain life. If you admit design, all probabilities cease to be relevant.

10. What argument does this program make for God's existence? What is the biblical claim on this subject?

**Answer:** The creation cannot be the product of chance. It must have been designed and planned by an intelligence (Psalm 19:1ff; Romans 1:19ff; Genesis 1:1; Job 38).