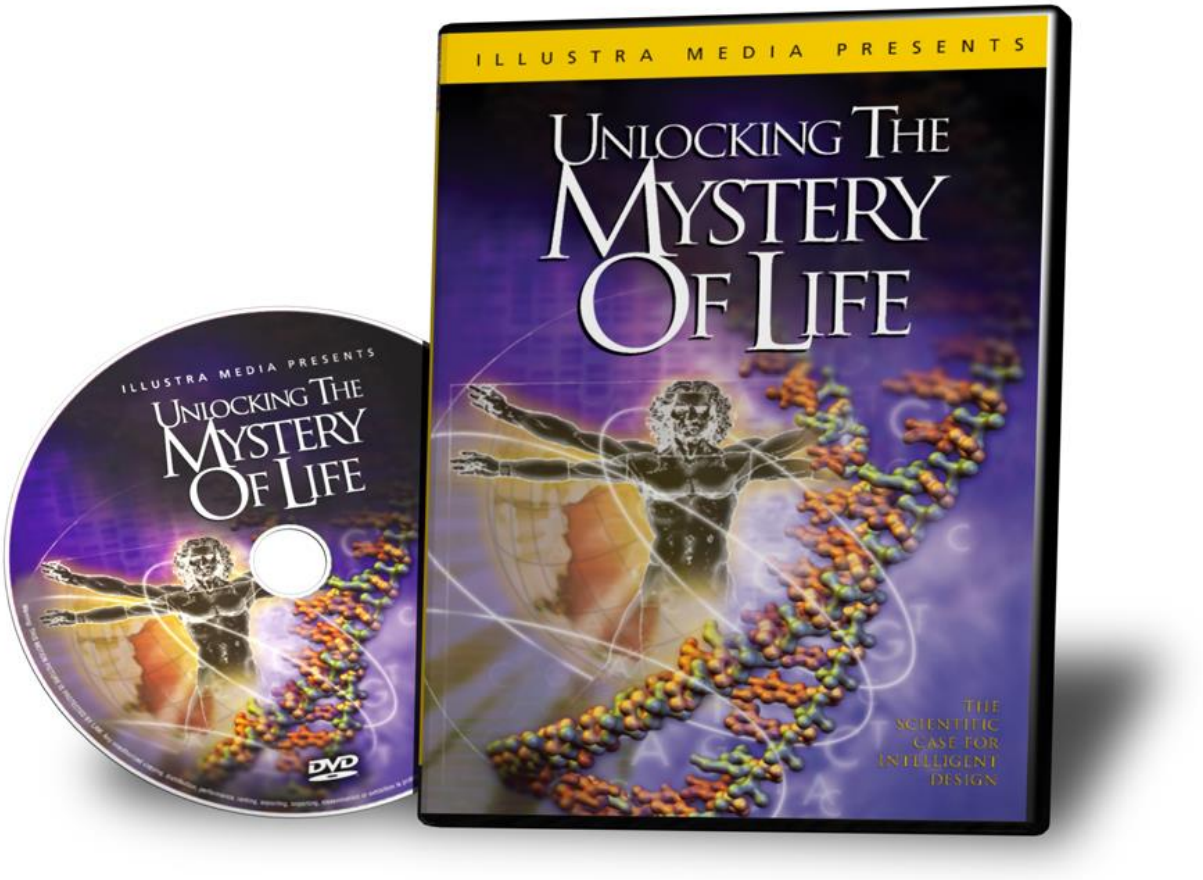

DISCUSSION & STUDY GUIDE

By Ryan Huxley

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Introduction

The theory of intelligent design (ID) is a fascinating topic and of great interest to many people. However, many people have inaccurate understandings of the basic concepts associated with ID. In an effort to provide more clarity, Illustra Media produced a series of engaging and informative documentaries covering many of the different types of scientific evidence supporting ID. Stunning computer animation and interviews with leading academic experts provide the viewer with powerful illustrations and explanations for many of the key ID concepts. Illustra's documentary *Unlocking the Mystery of Life* highlights basic ID concepts, especially regarding the evidence for design in biology.

This Discussion & Study Guide ("guide") is designed to help you and others learn about these concepts in more detail. It is broken into four segments and should be used in conjunction with viewing the Illustra Media documentary *Unlocking the Mystery of Life.* The guide has short-answer-style questions, fill-in-the-blank and true/false statements as well as discussion questions. It can be used for individual or group study, though the discussion questions are best for group learning situations. Answers to questions are provided at the back of the guide. Additional resources are referenced in the 'Answers' portion for those interested in gaining a more detailed understanding of a particular topic.

The short-answer questions are taken directly from the film. More difficult questions or statements are usually at the end. Discussion questions are often open-ended and have been broken into two different categories: 1) those relating directly to a video topic, and 2) those that relate to a video topic, but are not explicitly covered in the video. Answering questions that extend the material covered in the video may require "a little digging" to arrive at an answer using additional resources.

If you would like to start a club to discuss ID and evolution at your school, university, or in your community, consider starting an Intelligent Design and Evolution Awareness (IDEA) Club! The IDEA Center helps students start IDEA Clubs on college and high school campuses, as well as in communities, around the U.S. and the world. The IDEA Center can provide resources to help you start an IDEA Club - and you do not have to be an ID expert to start one. Please see www.ideacenter.org for further information.

Please direct any feedback or input about the guide to ryan@ideacenter.org.

1. Video Chapters 1-3 (0:00-18:17)

Basic Questions:

1.1. List two of the four 'big life questions' noted in the video.

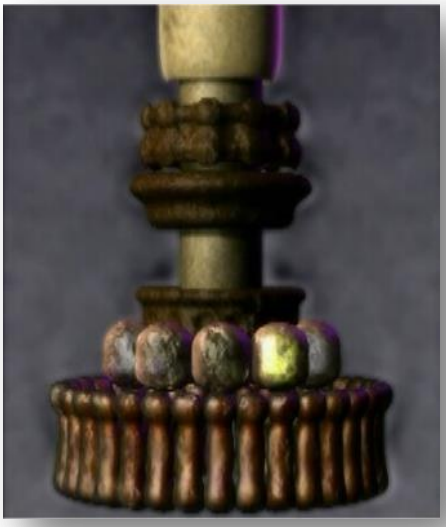
1.2. What was the name of Charles Darwin's famous book?

1.3. Darwin proposed a new explanation for the diversity of life. What was it?

1.4. List one example of a functional advantage given in the video segment.

1.5. Why was Darwin's new explanation considered radical for its time?

1.6. What was the name of the book that Michael Behe read that caused him to question evolution? Who authored the book?



1.7. How fast can some flagella spin?

1.8. How quickly can they (flagella) stop?

1.9. Prior to the discovery of molecular _____ in the cell, Darwin's theory was more plausible.

1. Video Chapters 1-3 (0:00-18:17)

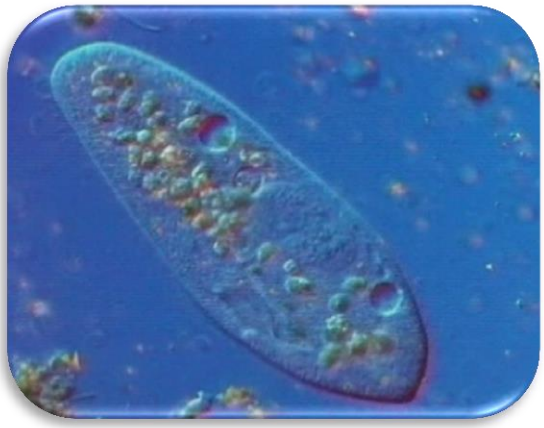
1.10. Jed Macosko noted that there is not just one or a few miniature machines in the body but as many as there are _____ _____.

Discussion Questions:

1.11. What were some of Darwin's key findings during the His Majesty's Ship (HMS) Beagle journey of 1831?

1.12. In your own words, try to retell the explanations and examples given using the wildlife on the Galápagos Islands to illustrate the main points of Darwin's theory.

1.13. What are some of the discoveries over the last several decades that have led to a significant change in the understanding of the cell?

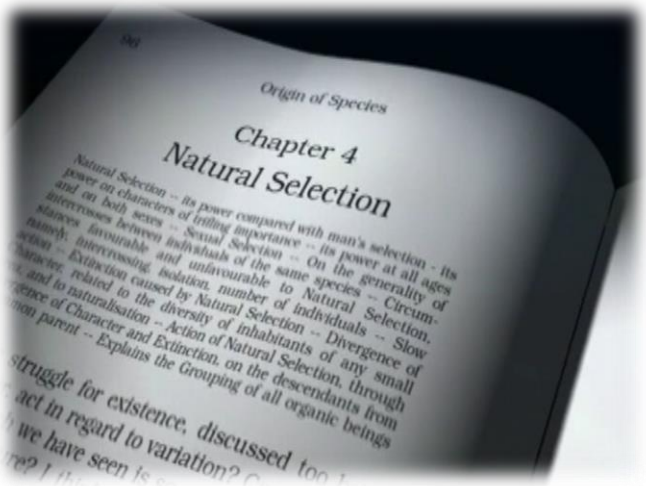


1. Video Chapters 1-3 (0:00-18:17)

Discussion Questions Beyond the Video:

1.14. The video began with some big life questions. What are some other questions people must answer or topics they must consider when forming their own worldview?

1.15. How should a person test proposed answers to worldview questions?



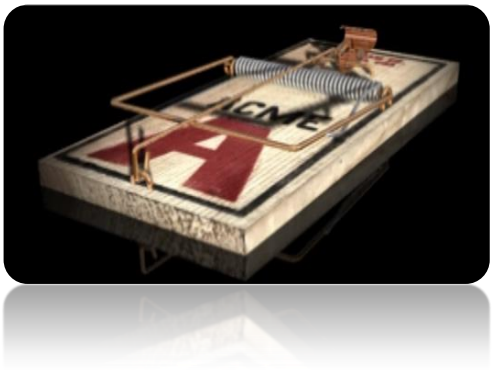
1.16. Is natural selection random? Explain.

1.17. Are mutations random? What are the implications of your answer?

1.18. At one time in the distant past, some people thought the Earth was flat or that the sun revolved around the Earth. However, scientific discoveries changed that thinking, eventually giving rise to the current views. What other kinds of scientific discoveries have dramatically changed the way people think about things?

1.19. Have you ever been confronted with evidence or reasoning that challenged your previous views?

2. Video Chapters 4-5 (18:18-29:18)



Basic Questions:

2.1. What molecular machine is discussed in this segment?

2.2. What is the definition of irreducible complexity (IC)?

2.3. Molecular machines often require other molecular machines for their construction. True or false?

2.4. According to the quote given from Darwin, how does natural selection work on organisms?

2.5. Critics of IC suggest that parts from other molecular machines somehow combine together to form new machines that function differently from those that supplied the parts. This theory is referred to as _____.

2.6. One of the flaws of this theory is that it fails to provide a plausible explanation of what must first occur before the machine can begin to function. What must occur first?

2.7. What is the Darwin quote that shows why IC is so challenging to neo-Darwinism?

2.8. What was the name of the book discussed, written by Michael Behe, who has a doctorate in biochemistry?

Discussion Questions:

2.9. Why is IC a challenge to natural selection?

2. Video Chapters 4-5 (18:18-29:18)

2.10. Some critics have suggested that because there are other simpler molecular machines that make use of some of the same protein components, these molecular machines provide actual counter-examples to supposedly IC molecular machines since these show prior function for such elements upon which natural selection can act. Is such a rebuttal to IC correct? Why or why not?

Discussion question beyond the video:

2.11. Some critics have claimed that IC is actually just an argument from ignorance - simply because we cannot think of how the flagellum arose through natural processes does not mean it did not. How would you respond to such claims?

3. Video Chapters 6-10 (29:19-50:33)

Basic Questions:

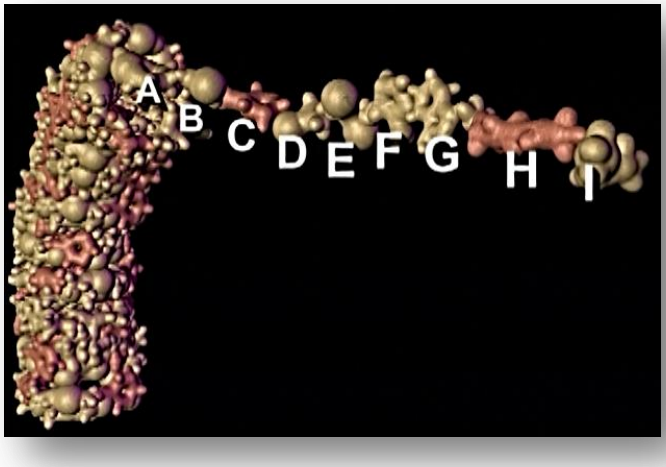
3.1. Darwin compared the development of life to a _____.

3.2. Origin-of-life theorists perform experiments to try to create the "building blocks" of life from natural, unguided processes. These "building blocks" are called _____ _____?

3.3. About how many different types of these "building blocks" are needed for life?

3.4. When chained together in the right sequence, these "building blocks" create _____.

3.5. The 'day-to-day' tasks within cells that keep them alive and functioning are performed by _____.



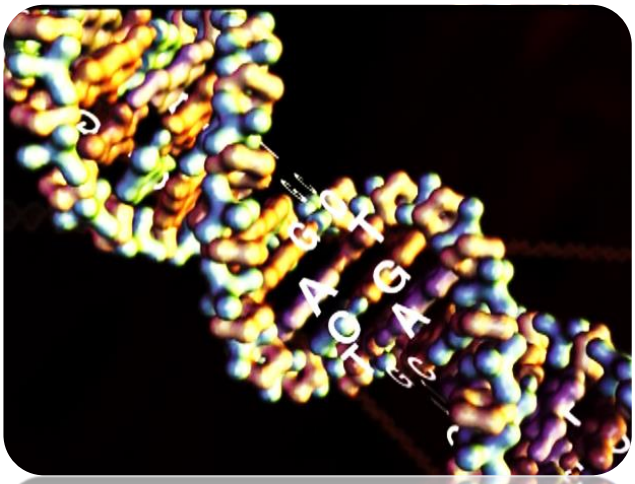
3.6. Approximately how many "building blocks" are in the simplest functional chain?

3.7. Mathematicians have estimated that if the early Earth was covered in primordial soup with all of the relevant "building blocks" present, it would require about _____ years to get the right sequence by chance alone to create simple proteins.

3.8. Chance is still considered a valid avenue of research by origin-of-life scientists. True or false?

3. Video Chapters 6-10 (29:19-50:33)

3.9. What dictates amino acid sequences?

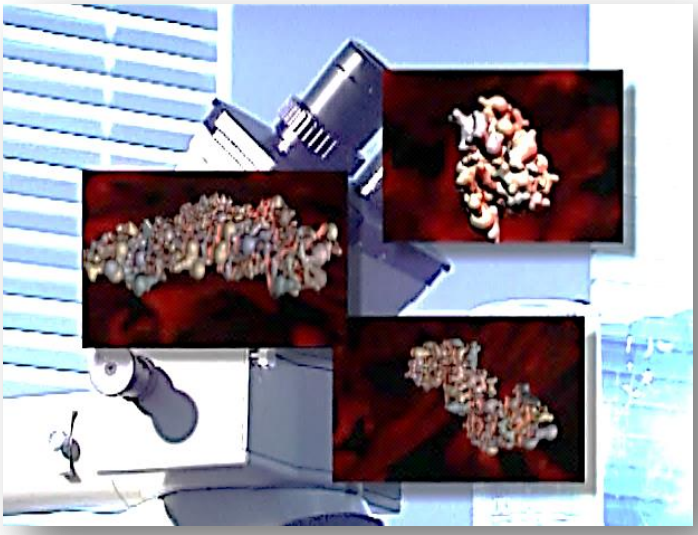


3.10. What is the key aspect of the amino acid sequence that cannot be explained by natural processes?

3.11. What is known as the language of life?

3.12. Natural selection is possible without a system that can replicate, like DNA. True or false?

3.13. What is the classic analogy one could use to describe the problem for the origin of proteins and DNA?



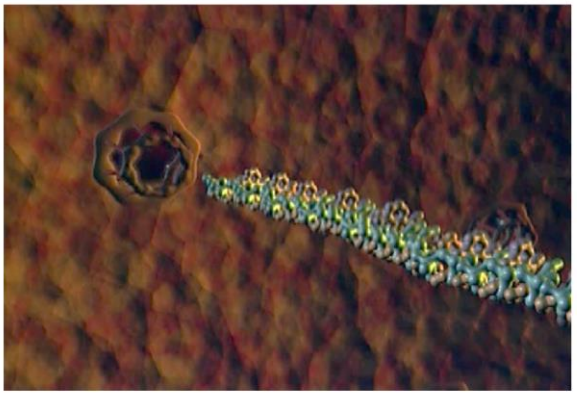
Discussion Questions:

3.14. According to this video segment, why is sequence important in the chains making the "building blocks"?

3.15. What are some of the key questions origin-of-life researchers grapple with in their experimental scenarios?

3. Video Chapters 6-10 (29:19-50:33)

3.16. Describe the basic problem that the presence of information in the genome poses to naturalistic processes or explanations.



Discussion Questions Beyond the Video:

3.17. In response to criticisms of the naturalistic explanations in this video segment, some skeptics point out that there have been experiments which resulted in the creation of some "building blocks" through natural processes. Let's assume that they are correct. Is this sufficient to provide a naturalistic explanation for the origin of life?

3.18. What are some of the positive repercussions that could follow if a professor publicly stated that, based on the evidence, what he/she had stated in the past was incorrect? What are some of the negative repercussions?

3. Video Chapters 6-10 (29:19-50:33)

3.19. Some people think that if the "building blocks" can be generated through natural processes, then the origin of life probably also occurred through similar processes. In response, others have pointed out this would be like coming across a log cabin in a forest and claiming the trees were the building blocks and they self-assembled into the cabin. Do you think this is a good response? Why or why not? Are there other things that must be explained beyond the "building blocks"?

4. Video Chapter 11 (50:34-1:05:23)

Basic Questions:

4.1. What did Francis Crick say that biologists must constantly remind themselves of?

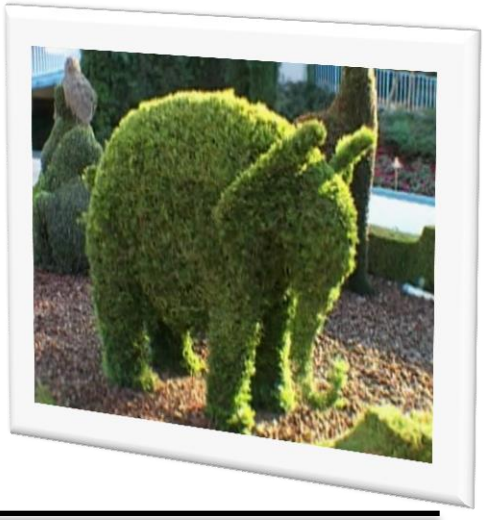
4.2. The book *The Design Inference* challenges methodological naturalism and was written by _____, who holds a doctorate in mathematics.

4.3. Intelligent agents are associated with systems considered to be "_____ _____" systems.

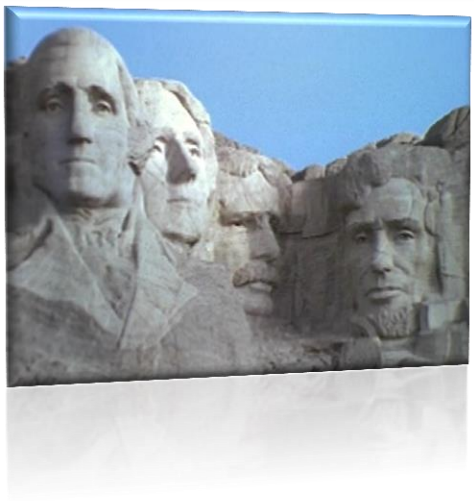
4.4. Chance is capable of creating/originating new information. True or false? Explain.

4.5. The reasoning used in intelligent design is non-scientific. True or false? Explain.

4.6. The third fundamental entity beyond matter and energy that will need to be considered by 21st-century biology will be the origin and development of _____ in biological systems.



4. Video Chapter 11 (50:34-1:05:23)



Discussion Questions:

4.7. Explain how one can determine whether intelligent design is a religiously based theory.

4.8. Some scientists claim that the only proper way to carry out scientific research is to utilize what is known as "methodological naturalism." What is methodological naturalism?

4.9. What causes does methodological naturalism exclude from consideration in science?

Discussion Questions Beyond the Video:

4.10. What are the basic steps in making the design inference?

4.11. Discuss the difference between creationism and intelligent design.

4.12. If ID is different from creationism, does that mean it is anti-theistic or anti-Christian? Why or why not?

4. Video Chapter 11 (50:34-1:05:23)

4.13. Some critics claim ID is not scientific because it has purportedly not published in peer-reviewed science journals. Regardless of the validity of this statement, is the reasoning used by it reasonable? Are these claims correct?

Answers

Please note: Many of these answers contain links to other websites. These were accessed between October 2012 and January 2013. Simply because a link is provided does not necessarily imply endorsement of that site or the views expressed on that site. In the discussion questions, while answers are frequently provided, individual responses are likely to vary; the answers provided for the discussion questions give some of the basic points that could be included in a response.

1. Video Chapters 1-3 (0:00-18:17)

Basic Questions:

1.1. Where did we come from? How did we get here? What is our relationship to reality? What brought about all of life?
1.2. *The Origin of Species* (Full title: *On the Origin of Species by Means of Natural Selection, on the Preservation of Favored Races in the Struggle for Life*)
1.3. Natural selection.
1.4. Finch beaks becoming larger, sharper, and stronger during droughts compared to normal weather periods for that region.
1.5. Because it provided a plausible explanation for life developing in an unguided fashion without the need for a designer or Divine Creator.
1.6. *Evolution: A Theory in Crisis*, by geneticist Michael Denton.
1.7. 100,000 rpm.
1.8. 1/4 turn.
1.9. Machines.
1.10. bodily functions.

Discussion Questions:

1.11. During the journey, Darwin stopped at the Galápagos Islands and studied the plant and animal life there. Many of the creatures he had never seen before, nor anything like them.
1.12. Different species of finches on the islands have beaks of different types and sizes. Depending on changes in climatic conditions, some finches are better able to survive based on food availability and their ability to obtain that food. Those with the appropriate kinds of beaks are better adapted to get the necessary food to survive. Those that survive pass on these variations to their offspring and are then considered to be selected for their adaptations, while others die off. This is how changes to populations can occur over time, bringing about new types of organisms.
1.13. The complexities of the cell at the molecular level have led to a dramatically different understanding of the cell. There are circuits, assembly instructions, and a myriad of molecular machines at work within each cell.

Answers

Discussion Questions Beyond the Video:

1.14. A worldview generally consists of several basic elements. The answers could include five commonly cited elements: 1) a view or belief about the nature of God; 2) view or belief about ultimate reality (e.g., is the world eternal or finite? Is it the result of creative action or not?); 3) a view or belief about knowledge (what part does experience play in the role of knowledge?); 4) a view or belief about ethics/morality; 5) a view or belief about the destination of humanity (e.g., is there life after death? Are we only material objects? Do we have free will?).

1.15. Answer could include: One can test for consistency of reason or laws of logic, or make a test of experience (i.e., is it consistent with what we know of or about both our inner and outer world - that is, inside and outside of us - for the inside part, does it explain love, guilt, morality, ethics, etc.). One can also make a test of practice - can it be lived consistently?

1.16. Answers may vary, but may include the following information: natural selection is not random. Based upon changes in an organism due to genetic mutations and the environment in which it lives, it is a certainty that the organism will live or die if the changes affect its ability to survive. This life and death certainty is basically natural selection acting upon the noted changes.

1.17. Answers may vary, but should point out that yes, mutations are random and occur without respect to the needs of the organism. This causes great difficulty for Darwinian evolution to produce new complex features.

1.18. Answers may vary but could include the discovery of the Big Bang, heliocentric solar system, plate tectonics, solar atmosphere, germs, blood-letting to cure diseases, DNA, etc.

1.19. Answers may vary.

Further Reading:

1. *Where Does the Evidence Lead?* documentary website at http://www.wheredoestheevidencelead.com/.
2. Websites providing lists of famous scientists in history: www.greatscientists.net; www.famousscientists.org; http://www.buzzle.com/articles/list-of-famous-scientists-in-history.html.
3. "What is the modern theory of evolution?" at http://www.discovery.org/a/9491.
4. "Is there scientific evidence against Darwinian evolution?" at http://www.judgingpbs.com/index.html.
5. "Debate: Was Darwin wrong?" at http://www.faithandevolution.org/debates/was-darwin-wrong.php.
6. "Debate: Is there an "edge" to evolution?" at http://www.faithandevolution.org/debates/is-there-an-edge-to-evolution.php.
7. *Explore Evolution: The Arguments For and Against Neo-Darwinism*, (Hill House, 2007) at http://www.exploreevolution.com/.
8. Casey Luskin and Ralph Seelke, "Antibiotic Resistance Revisited" at http://www2.exploreevolution.com/exploreEvolutionFurtherDebate/2009/02/antibiotic_resistance_revisite.php.
9. Jonathan Wells, "Misrepresenting the Galapagos Finches" at http://www2.exploreevolution.com/exploreEvolutionFurtherDebate/2009/02/misrepresenting_the_galapagos_1.php.

Answers

10. Casey Luskin, "Response to the NCSE's Reply to Explore Evolution on Natural Selection" at http://www2.exploreevolution.com/exploreEvolutionFurtherDebate/2010/03/response_to_the_ncses_reply_to.php.
11. Additional debate topics on the *Explore Evolution: The Arguments For and Against Neo-Darwinism* book can be found at "Further Debate - Continuing the debate for and against Neo-Darwinism" at http://www.exploreevolution.com/further-debate.php.

2. Video Chapters 4-5 (18:18-29:18)

Basic Questions:

2.1. The bacterial flagellum.

2.2. All the components of a system must be present or it ceases to function. For further information on IC systems, see the following links:
- "Primer: Irreducible Complexity in a Nutshell" at http://www.ideacenter.org/contentmgr/showdetails.php/id/1142.
- "Irreducible Complexity: The Challenge to the Darwinian Evolutionary Explanations of many Biological Structures," at http://www.ideacenter.org/contentmgr/showdetails.php/id/840.

2.3. True. (For a good short video providing a description of some of the components and showing some aspects of the construction process, see http://www.youtube.com/watch?v=Ey7Emmddf7Y.)

2.4. According to Darwin, natural selection works on slight, successive modifications, only selecting for or against them. Quote: Natural selection is … scrutinizing …the slightest variations; rejecting those that are bad, preserving and adding up all that are good.

2.5. Co-option.

2.6. Co-option does not address the assembly instructions required for proper integration and construction of the various components.

2.7. Darwin stated, "If it could be demonstrated that any complex organ existed, which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down."

2.8. *Darwin's Black Box: The Biochemical Challenge to Evolution.*

Discussion Questions:

2.9. All parts must be present for functioning - there are no 'simpler' versions upon which natural selection can act.

2.10. As noted in the video, there are several items that must be explained:
- Many proteins lack homologues.
- Any new proteins in the more complex version must be explained.
- The sequence of construction of the new molecular machine for aspects that are 'new' compared to the simpler version.
- A plausible description of intermediate stages that accounts for the genetic changes required to describe not only the new protein components, but other molecular machines involved in the construction that are not present in the simpler version - this is a compounding difficulty since the function and integration of various components into systems must be accounted for in the explanation.

Answers

Another problem is that some critics have constructed a strawman argument of the IC definition, claiming that if some proteins that make up flagella are found elsewhere, then IC is incorrect. However, this is an incorrect understanding of IC since IC does not say that the proteins in a given IC system must not be used elsewhere - it says that the particular configuration of the proteins is such that if that configuration is modified by removing a component, that system no longer functions. Critics are only focusing on the word "function", rather than keeping that term in context: "function of that system." It is the functioning of that final system that is of primary concern, not just the functioning of those proteins in other simpler systems.

Discussion Questions Beyond the Video:

2.11. This response misses the key aspect of IC systems - they are not visible to natural selection. If other pathways are suggested, they become far more difficult to justify given the lack of a mechanism to maintain the genetic modifications. A multitude of components, integration, and construction sequencing must be explained by natural processes. Furthermore, testing of such claims becomes extremely problematic if there are no environmental stresses that can be applied since natural selection is unable to act on intermediate systems. Evolutionary claims of this type become a "just so" story. Refer to the following for additional information:

- "FAQ: Is intelligent design merely an 'argument from ignorance?'" at http://www.ideacenter.org/contentmgr/showdetails.php/id/1186.
- "FAQ: Does intelligent design theory make the 'Unexplained' = 'Unexplainable' fallacy?" at http://www.ideacenter.org/contentmgr/showdetails.php/id/1167.

Further Reading:

1. Michael Behe, "Molecular Machines: Experimental Support for the Design Inference" at http://www.discovery.org/a/54.
2. Various authors responding to criticisms of IC: "About Irreducible Complexity: Responding to Darwinists Claiming to Have Explained Away the Challenge of Irreducible Complexity" at http://www.discovery.org/a/3408.
3. Podcast on "Irreducibly Complex: Behe on the Bacterial Flagellum," *ID The Future* (August 22, 2008) at http://www.idthefuture.com/2008/08/irreducibly_complex_behe_on_th.html.
4. Casey Luskin, "Molecular Machines in the Cell" at http://www.discovery.org/a/14791.
5. Videos:
   - Molecular Machines Animations and Movies at http://www.arn.org/mm/mm_movies.htm.
   - Robert Crowther, "William Dembski on Molecular Machines and the Death of Darwinism," *Evolution News and Views* (October 13, 2007) at http://www.evolutionnews.org/2007/10/video_molecular_machines_and_t004297.html.
   - "Journey Inside The Cell" at http://www.journeyinsidethecell.com/.
   - "The Inner Life of the Cell" by XVIVO and Harvard University at http://multimedia.mcb.harvard.edu/anim_innerlife.html.
   - "ATP Synthase" at http://www.youtube.com/watch?feature=player_profilepage&v=XI8m6o0gXDY.
6. For a detailed debate on the blood clotting cascade being IC, refer to:

Answers

- Casey Luskin, "Kenneth Miller, Michael Behe, and the Irreducible Complexity of the BloodClotting Cascade Saga" at http://www.discovery.org/a/14081.
- Responses to other critics of the blood clotting cascade can be found in Michael Behe's article "In Defense of the Irreducibility of the Blood Clotting Cascade: Response to Russell Doolittle, Ken Miller and Keith Robison" at http://www.discovery.org/a/442.

3. Video Chapters 6-10 (29:19-50:33)

Basic Questions:

3.1. Tree - he referred to it as the "tree of life," starting with simple and going to more complex.
3.2. amino acids.
3.3. 20.
3.4. Proteins.
3.5. Proteins .
3.6. About 100.
3.7. 15 billion $x10^{60}$ years = $1.5x10^{70}$ years, which is well beyond (trillions and trillions and trillions ….) the 13.7 billion year age of the universe.
3.8. False.
3.9. The sequence of codons in deoxyribonucleic acid, DNA.
3.10. Information.
3.11. The information-based code in DNA.
3.12. False.
3.13. Which came first - chicken or the egg?

Discussion Questions:

3.14. Sequence is important because, without it, the amino acids will not fold properly into the correct three-dimensional shape to perform its function and the sub-cellular machinery destroys it.
3.15. How could life have evolved from simple chemicals? How could amino acids form from simple chemicals? How could amino acids get in their proper sequence by natural processes to form proteins?
3.16. Complex and specified information cannot be produced by unguided natural processes. Moreover, information does not require material objects for its origin. While it does rely on various material mediums for expression, it is separate from those mediums in meaning. An analogy would be that words written on a sheet of paper convey information that is completely independent of the chemistry of the ink and paper. Information and the medium through which it is expressed are independent entities.

Discussion Questions Beyond the Video:

3.17. No, it is not sufficient because even if the building blocks of life were present on the early Earth, there is no way to explain how they might have organized to give rise to information.

Answers

3.18. Positive repercussions include individuals who admit their mistakes can be esteemed for their honesty. This also encourages scientists to express their views, increasing academic freedom to follow the evidence where it leads. Negative repercussions include the possibility that individuals may be ridiculed for their new views or, in some cases, lose their jobs. For an interesting documentary about individuals who have suffered based on their ventures into the evolution-intelligent design controversy, including some who lost their jobs, see *Expelled: No Intelligence Allowed* with Ben Stein. A clip of that video can be seen at http://www.discovery.org/expelled/, which also has various resource links. Another site with many resource links associated with that video can be found at http://www.arn.org/expelled/.

3.19. The analogy used in the response is appropriate since, like the cabin, life appears designed. There are many other features of life that must be explained, such as the ability to use energy, replicate/reproduce, grow, and respond to its environment. Also like the cabin, life requires information – something which goes beyond the mere building blocks.

Further Reading:

1. "Primer: Origin of Life in a Nutshell" at http://www.ideacenter.org/contentmgr/showdetails.php/id/1143.
2. "Problems with the Natural Chemical 'Origin of Life'" at http://www.ideacenter.org/contentmgr/showdetails.php/id/838 (for a shorter version, see "Primer: Summary of Problems with Biological and Chemical Evolution" at http://www.ideacenter.org/contentmgr/showdetails.php/id/1510.
3. Edward Peltzer's Quiz and Answers for his talk on Intelligent Design and the Origin of Life at the 2002 USF IDEA Conference at http://www.ideacenter.org/contentmgr/showdetails.php/id/818.
4. James Shapiro, "A Simpler Origin For Life," *Scientific American* (February 12, 2007) at http://www.scientificamerican.com/article.cfm?id=a-simpler-origin-for-life.
5. Leslie Orgel, "The Implausibility of Metabolic Cycles on the Prebiotic Earth," *PLoS Biology* 6(1): e18 (January 22, 2008) at http://www.plosbiology.org/article/info:doi/10.1371/journal.pbio.0060018.
6. A series of detailed blog posts on the above Shapiro and Orgel references:
   - Casey Luskin, commenting on Shapiro's paper at *Evolution News and Views*:
     - "The Origin of Life: *Not So Simple* (Part 1)," (February 15, 2007) at http://www.evolutionnews.org/2007/02/the_origin_of_life_not_so_simp003192.html.
     - "The Origin of Life: Not So Simple (Part 2)," (February 16, 2007) at http://www.evolutionnews.org/2007/02/the_origin_of_life_not_so_simp_1003193.html.
     - "The Origin of Life: Not So Simple (Part 3)," (February 19, 2007) at http://www.evolutionnews.org/2007/02/the_origin_of_life_not_so_simp_2003194.html.
   - Casey Luskin, commenting on Orgel's paper at *Evolution News and Views*:
     - "Leslie Orgel: Metabolic Origin of Life 'Unlikely'; Complexity Requires 'A Skilled Synthetic Chemist' (Part 1)," (February 3, 2008) at http://www.evolutionnews.org/2008/02/leslie_orgel_metabolic_origin004792.html.

Answers

- "Leslie Orgel: Metabolic Origin of Life 'Unlikely'; Complexity Requires 'A Skilled Synthetic Chemist' (Part 2)," (February 6, 2008) at http://www.evolutionnews.org/2008/02/leslie_orgel_metabolic_origin_1004793.html.

7. Stephen C. Meyer, "Not by chance: From bacterial propulsion systems to human DNA, evidence of intelligent design is everywhere," *National Post of Canada* (December 1, 2005) at http://www.canada.com/nationalpost/news/issuesideas/story.html?id=8f7f51f2-a196-4677-9399-46f4f17b5b61.
8. Stephen C. Meyer, "DNA and the Origin of Life: Information, Specification, and Explanation," in *Darwinism, Design, and Public Education* (Michigan State University Press, 2003 - see http://www.darwinanddesign.com/) at http://www.discovery.org/scripts/viewDB/filesDB-download.php?command=download&id=1026.
9. Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (Harper One, 2009) at http://www.signatureinthecell.com/.
10. Video: *Journey Inside The Cell* at http://www.journeyinsidethecell.com/.
11. Podcasts:
    - "The Mystery of Life's Origin: An Interview with Dr. Charles Thaxton, Part One," *ID The Future* (July 21, 2008) at http://www.idthefuture.com/2008/07/the_mystery_of_lifes_origin_an.html.
    - "The Mystery of Life's Origin: An Interview with Dr. Charles Thaxton, Part Two," *ID The Future* (July 25, 2008) at http://www.idthefuture.com/2008/07/the_mystery_of_lifes_origin_an_1.html.
      - Note: The book *The Mystery of Life's Origin* is also available online at http://www.themysteryoflifesorigin.org/Mystery%20of%20Life's%20Origin.pdf.
12. William Dembski, "Intelligent Design as a Theory of Information" at http://www.arn.org/docs/dembski/wd_idtheory.htm.
13. Casey Luskin, "A Response to Dr. Dawkins' 'The Information Challenge'," *Evolution News and Views* (October 4, 2007) at http://www.discovery.org/a/4278.
14. Casey Luskin, "The NCSE, Judge Jones, and Citation Bluffs About the Origin of New Functional Genetic Information," *Evolution News and Views* (March 2, 2010) at http://www.discovery.org/a/14251.

4. Video Chapter 11 (50:34-1:05:23)

Basic Questions:

4.1. What they're observing in life is not designed, but evolved.
4.2. William Dembski.
4.3. information rich.
4.4. False.
4.5. False, ID uses the scientific method to make its claims.
4.6. Information.

Answers

Discussion Questions:

4.7. As noted in the video, intelligent design does *not* have any religious premises, though it does have religious implications. Theories that do not have religious premises are not religiously based. Refer to the following for additional information:
- "FAQ: Is Intelligent Design the same as Creationism?" at http://www.ideacenter.org/contentmgr/showdetails.php/id/1416.
- "FAQ: Is intelligent design just creationism (or creationism "in disguise")?" at http://www.ideacenter.org/contentmgr/showdetails.php/id/1183.
- "FAQ: Is ID just a religious or theological concept?" at http://www.ideacenter.org/contentmgr/showdetails.php/id/1162.
- "FAQ: Is intelligent design an appeal to miracles or the supernatural?" at http://www.ideacenter.org/contentmgr/showdetails.php/id/1187.

4.8. It is a limitation that allows only natural or mechanistic causes or events be considered in scientific explanations of observed phenomena.

4.9. Non-natural or intelligent causes are excluded from consideration.

Discussion Questions Beyond the Video:

4.10. Answers may be something like the following: Premise 1: Intelligent/agent causes exist.
Premise 2: Hallmarks/Characteristics of these causes are high levels of specified complexity (SC).
Premise 3: In our experience, intelligent/agent causes are the only cause of SC.
Premise 4: We can empirically detect these hallmarks/characteristics.
Premise 5: Biological life has detectable SC.
Conclusion: Therefore, the best explanation for the SC in life is that it was designed by an intelligent/agent cause

4.11. Creationism generally starts with the Bible and looks then to science to substantiate the views associated with it. Intelligent design does not rely upon the Bible or any other religious text as its basis. Creationism generally identifies the Judeo-Christian God as the creator of life. Intelligent design is unable to identify the designer(s) due to its limited scope of only providing tools to discern designed objects. One could summarize ID in two words: design detection.

4.12. No. Intelligent design is consistent with many theistic beliefs. While ID does not have religious premises, its conclusion that life was designed is consistent with the teachings of many religions.

4.13. The validity of a scientific claim is not determined by the number of people in agreement with it; its validity is based on how well it is supported by the evidence. Furthermore, the referees who decide what will be published can exert bias and prevent papers from being published in their journals if they disagree with the conclusions or implications of the paper. See the following for additional information:
- "Intelligent Design Is Peer-Reviewed, but Is Peer-Review a Requirement of Good Science?" at http://www.discovery.org/a/18301.
- "FAQ: Why isn't intelligent design found published in peer-reviewed science journals?" at http://www.ideacenter.org/contentmgr/showdetails.php/id/1163.
- "Is Peer-Review a Requirement of Good Science?" at http://www.ideacenter.org/contentmgr/showdetails.php/id/1516.

Answers

Additionally, this claim is not correct. See "Peer-Reviewed & Peer-Edited Scientific Publications Supporting the Theory of Intelligent Design (Annotated)" at http://www.discovery.org/a/2640 for a list of peer-reviewed publications supportive of intelligent design.

Further Reading:

1. "What is intelligent design?" at http://www.intelligentdesign.org/whatisid.php.
2. Jonathan Witt, *A brief history of the scientific theory of intelligent design* at http://www.evolutionnews.org/The%20Origins%20of%20Intelligent%20Design.pdf.
3. Stephen Meyer, "A Scientific History and Philosophical Defense of the Theory of Intelligent Design" at http://www.discovery.org/3241.
4. William Dembski, "The Explanatory Filter" at http://www.arn.org/docs/dembski/wd_explfilter.htm.
5. William Dembski, *The Design Inference: Eliminating Chance Through Small Probabilities* (Cambridge University Press, 1998) at http://www.arn.org/arnproducts/php/book_show_item.php?id=28.
6. William Dembski, "Detecting Design in the Natural Sciences" at http://www.designinference.com/documents/02.02.POISK_article.htm.
7. Casey Luskin, "Intelligent design (ID) has scientific merit because it uses the scientific method to make its claims and infers design by testing its positive predictions," *OpposingViews.com* (September 8, 2008) at http://www.discovery.org/a/7051.
8. Casey Luskin, "The Positive Case for Design" at http://www.discovery.org/986.
9. William Dembski, *The Design Revolution: Answering the Toughest Questions About Intelligent Design* (InterVarsity Press, 2004) at http://www.arn.org/arnproducts/php/book_show_item.php?id=65.
10. Discovery Institute's *The Theory of Intelligent Design: A Briefing Packet For Educators* at http://www.discovery.org/scripts/viewDB/filesDB-download.php?command=download&id=1453.
11. Casey Luskin, *The College Student's Back to School Guide to Intelligent Design - Resources to Help You Understand the Debate Between Darwinian Evolution and Intelligent Design* at http://www.evolutionnews.org/backtoschoolguide.pdf.
12. "IDEA Center FAQs and Primers" at http://www.ideacenter.org/resources/faq.php.

For a good list of additional reading references, see the Discovery Institute's essential reading list at http://www.discovery.org/csc/essentialReadings.php.

For several years' worth of the "Top Ten Darwin and Design News and Resources," refer to http://www.arn.org/top10/.

As was noted in the introduction to this study guide, if you would like to start a club to discuss intelligent design and evolution at your school, university, or in your community, consider starting an IDEA Club! The IDEA Center can provide resources to help you with doing just that, and you do not have to be an ID expert to start one - see www.ideacenter.org for further information.