A DIALOGUE ON EVOLUTION AND INTELLIGENT DESIGN

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FOREWORD FOR "ANONYMOUS" (2026): A DIALOGUE ON EVOLUTION AND INTELLIGENT DESIGN

The author of this article wants to stay anonymous (I hope only for the time being).

Now: What is this long and detailed paper all about? Referring to "A fictional dialogue on evolution as found in the second edition of the textbook *Reason in the Balance: An Inquiry Approach to Critical Thinking* by Sharon Bailin and Mark Battersby" (Second edition 2016),[2] the author explains the goal of his dialogue by his clear *RESEARCH QUESTION*, namely 'What might intelligent design theorists and other critics of neo-Darwinism have said if they were included in the conversation?' Due to the fact that the book of Bailin and Battersby did not incorporate the essential spectrum of the necessary facts and indispensable points for an adequate approach to the scientific theory of intelligent design (ID), our anonymous author has really carefully/meticulously/thoroughly checked the enormously extensive scientific ID literature (and a range of additional papers critical of Neo-Darwinism – the ruling theory of evolution today) and documented the key points and takeaways here by more than 1000 (one thousand!) citations to reach the goal for any interested reader to be in the balance for critical thinking on that captivating 'to be or not to be' question of the origin of the universe and life in all its forms.

In the final analysis, I would say that the gist of the questions addressed by him is whether '*nothing made everything for no reason'* or whether an *absolutely ingenious mind* is behind the origin of the universe and life. And, of course: Can reason and natural science help solve the fundamental questions that sooner or later are raised by any intelligent and inquiring person?

The article virtually covers the entire spectrum of essential inquiries and answers having been raised and discussed on *evolution and intelligent design,* especially during the last several decades up to now by so many highly qualified authors (see the table of contents and the authors cited in the text below). I can only highly recommend/endorse/advocate the in-depth study of the present article for all the readers who would like to enhance their critical thinking to get their reason in the balance on these so existentially important questions strongly affecting our view on our past, present, and future life.

[1] https://www.weloennig.de/CurriculumVitae.pdf
[2] https://www.amazon.com/Reason-Balance-Approach-Critical-Thinking/dp/1624664776

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Research Question: A fictional dialogue on evolution is found in the second edition of the textbook *Reason in the Balance: An Inquiry Approach to Critical Thinking* by Sharon Bailin and Mark Battersby. What might intelligent design theorists and other critics of neo-Darwinism have said if they were included in the conversation?

Section 1

1.1 Dialogue in *Reason in the Balance*:

Juanita: I admit learning about the history of geology did teach me things about the world that I didn't know. And there wasn't any math. I did have to look up a few things, but basically I could understand it. It really was amazing that they found those splits in the middle of the ocean—and that all this explains earthquakes and volcanoes. So OK, maybe science isn't all that bad.

Winnie: And if we study biology, we see a much more complex and beautiful world of plants and animals with all their remarkably developed abilities and intricate designs. It makes you feel in awe of nature.

Stephen: Right! And it provides clear proof of the existence of a creator, a magnificent creator who designed living things in all their complexity and intricacy.

Winnie: Now just a minute, Steve. Thanks to Darwin, science can now explain why the natural world is so full of the wonderful things that we see. Darwin showed that there was no need for the creator to explain the vast variety of species on Earth.

Stephen: One thing I do know is that evolution is just a theory, and it's a theory with a lot of holes in it. Scientists try to cover up those holes, but they're there, and they show that there must be other forces at work to produce such an intricate and well-functioning entity as a human body. I mean, look at the eye. Do you really expect me to believe that the human eye was created by blind chance?[1]

1.2 Extended Dialogue

1.2.1 The Human Eye and Design Principles

Dembski & Ewert: "Consider what is probably the most widely cited example of bad design in biology . . . namely, the human eye's inverted retina, which situates the photoreceptors behind nerves and blood vessels and thus would seem to obstruct the incoming light. The inverted retina in humans—and vertebrates more generally—has become the locus classicus of poor biological design."[2]

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[1] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 309.

[2] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 356.

Behe: "The reasoning [of proponents of the argument from imperfection] can be written as a syllogism: 1. A designer would have made the vertebrate eye without a blind spot. 2. The vertebrate eye has a blind spot. 3. Therefore Darwinian evolution produced the eye."[3]

Dembski & Ewert: "As it is, good functional reasons exist for [the inverted retina]. A visual system needs speed, resolution, and sensitivity. Speed is unaffected by the inverse wiring. Resolution is unaffected as well (except for a tiny blind spot, which the brain works around without difficulty). For comparison, the cephalopod retina of squids and octopuses, which is said to be 'correctly wired' by having photoreceptors in front of nerves and blood supply, is no better at resolving objects in its visual field.

"One reason the 'incorrect wiring' doesn't affect resolution is that the nerve cells leading from the retina to the brain are surrounded by Müller glial cells that serve double duty, not just as insulation for nerve signals but also as optical fibers that transmit light with minimal distortion to the retina (some might regard this feature of the glial cells as good design!).

"As for sensitivity, the inverted retina enhances it. Retinal cells need more oxygen when the incident light is minimal. Placing the blood supply in front of photoreceptors ensures that retinal cells will have the oxygen they need to be as sensitive as possible when incident light is minimal. Some vertebrate eyes with inverted retinas, such as in frogs, are so sensitive that they can respond to single photons."[4]

Gauger: "The rod cells in our eyes can detect as little as one photon of light; our brains receive the signal after just nine rods have responded."[5]

Ullrich: "The inverse design of the vertebrate retina is ingenious and highly optimized in terms of its function."[6]

"The design of the squid's eye provides its owner with the optimal conditions to perceive optical stimuli in its environment. However, there is no empirical basis for describing this design principle as a better variant than the inverted retina in vertebrates. A comparative evaluation of biological characteristics, detached from the functional requirements of the living environment, leads to empirically unsupported qualifications."[7]

Rammerstorfer: "What is optimal for one purpose may be only partially suitable for another and not at all suitable for any other purpose. A sports car, for example, would be unbeatable on asphalt, frustrating when shopping, and completely useless off-road.

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[3] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 224.

[4] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 356–357.

[5] Ann Gauger, "Are Our Bodies the Product of 'Unintelligent Design'?" *Science and Culture Today*, 5 February 2016, https://scienceandculture.com/2016/02/are_our_bodies/ : accessed 29 October 2025.

[6] Reinhard Junker, "Deutungen des Lebens unter der Voraussetzung von Schöpfung," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 329, sec. 16.5, text accompanying fig. 16.38; subsection authored by Henrik Ullrich. Quoted passage translated from German.

[7] Reinhard Junker, "Deutungen des Lebens unter der Voraussetzung von Schöpfung," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 329, sec. 16.5, boxed section; subsection authored by Henrik Ullrich. Quoted passage translated from German.

"Designers are usually faced with numerous different requirements that their designs must meet."[8]

Myers III: "In a physical world there will be design constraints, so it is only realistic to expect tradeoffs. Nonetheless, there is no optical device devised by man that can match *any* eye type, so a little humility is appropriate. In fact, it is estimated that to build an optical device that can *approximate* the human eye, it would cost about $35 million and the thing would weigh around four tons. Yet each human has two completely *gratis*, weighing in at just 7.5 grams each!"[9]

Laufmann & Glicksman: "THAT VISION is possible at all is startling. Vision requires more solutions to more difficult problems than perhaps any other system in the body. It combines perfectly tuned biochemistry with solutions to complicated engineering problems involving general physics, optics, and electrical engineering, all at a level of nanotechnical sophistication that makes even the best human engineers drool."[10]

Marks II, Dembski & Ewert: "Conflicting criteria require application of the theory of multi-objective, or Pareto, optimization. Although there must be compromise, the final design can still be optimal in the sense it's the best we can get under conflicting design criteria."[11]

Gonzalez & Richards: "To take a familiar example, think of the laptop computer. Computer engineers seek to design laptops that have the best overall compromise among various conflicting factors. Large screens and keyboards, all things being equal, are preferable to small ones. But in a laptop, all things aren't equal. The engineer has to compromise between such matters as CPU speed, hard drive capacity, peripherals, size, weight, screen resolution, cost, aesthetics, durability, ease of production, and the like. The best design will be the best compromise."[12]

Burgess: "Even though the human arm can be vulnerable to instability in the shoulder and wrist, this is a consequence of having a large range of motion at these joints, i.e. the arm design has an appropriate compromise between stability and range of motion. When considering the whole set of functional requirements, the human arm and hand can be judged as having a highly optimal design."[13]

Laufmann & Glicksman: "The human body is an engineering wonder, and in no small part because of its many masterfully navigated engineering trade-offs, which afford it a remarkable resilience across a long span of life, a life that includes a rich variety of activities, the ability to thrive in a wide range of

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[8] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 73. Quoted passage translated from German.

[9] Walter Myers III, "The Problem with 'Bad Design' Arguments," *Science and Culture Today*, 8 May 2018, https://scienceandculture.com/2018/05/the-problem-with-bad-design-arguments/ : accessed 29 October 2025.

[10] Steve Laufmann and Howard Glicksman, *Your Designed Body* (Seattle: Discovery Institute Press, 2022), 181–182.

[11] Robert J. Marks II, William A. Dembski, and Winston Ewert, *Introduction to Evolutionary Informatics*, Kindle edition (Singapore: World Scientific Publishing, 2017), 52–53. Page numbers reflect the Kindle edition mapped to ISBN 9813142146 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "criteria require"; for print readers, the page range provides approximate placement.

[12] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), xiv.

[13] Stuart Burgess, "Universal Optimal Design in the Vertebrate Limb Pattern and Lessons for Bioinspired Design," *Bioinspiration & Biomimetics* 19, no. 5 (2024): 6; digital file, https://iopscience.iop.org/article/10.1088/1748-3190/ad66a3/pdf : accessed 6 November 2025, https://doi.org/10.1088/1748-3190/ad66a3

diverse environments, and the capacity to reproduce itself."[14]

Rammerstorfer: "When it comes to evaluating designs, numerous factors and their interactions, as well as different perspectives, must be weighed. Ultimately, an assessment always takes place from a specific perspective: It may be that a design is anything but 'optimal' when measured against certain criteria. But perhaps the criteria to which the optimality assessment refers are not the relevant ones, or only a subset of them?"[15]

Luskin: "Many famous evolutionists (like Stephen Jay Gould) have popularized an argument that the panda's thumb is 'poorly designed' and thereby could not have been designed."[16]

Lönnig: "We always have to keep in mind that the panda's hands have a **dual function**: To walk . . . and to skillfully process bamboo . . . up to 15 hours a day."[17]

Ullrich: "Structures are usually polyfunctional, meaning they fulfill multiple tasks, so that an optimal compromise is the overall best solution for the requirements. Considering a biological structure in isolation is the wrong approach to correctly and fully understanding its functionality for the organism."[18]

Burgess: "Multifunctionality is a key means for achieving compactness because it significantly reduces the number of subsystems and components. Compactness has multiple benefits such as reduced energy demands, increased agility and the ability to meet tight dimensional constraints."[19]

Lönnig: "Considering all the different aspects of the panda's biology, I would call it the 'optimal intelligently designed panda system' . . . – exactly as a far-sighted ingenious genetic engineer would have considered and implemented it on all biological levels – in contrast to Gould's evolutionary '*Panda Principle*' implying, 'highly inefficient', 'imperfect', 'suboptimal', 'bad design' etc., while exclusively focusing on the isolated radial sesamoid."[20]

Luskin: "I think the 'panda's thumb is poor design' argument is now a Darwinian urban legend that has been debunked."[21]

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[14] Steve Laufmann and Howard Glicksman, *Your Designed Body* (Seattle: Discovery Institute Press, 2022), 159–160.

[15] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 79. Quoted passage translated from German.

[16] Casey Luskin, "Is the Panda's Thumb a 'Clumsy' Adaptation that Refutes Intelligent Design?" IDEA Center, http://www.ideacenter.org/contentmgr/showdetails.php/id/1477 : accessed 6 November 2025.

[17] Wolf-Ekkehard Lönnig, *The Panda's Thumb: Striking Imperfection or Masterpiece of Engineering? PART 1 and PART 2 in One Document* (self-published, 31 March to 13 June 2024; correction and additions, 11 May 2025, pp. 58–60), 18; digital file, https://www.weloennig.de/PANDA.Part1.pdf : accessed 6 November 2025.

[18] Reinhard Junker, "Deutungen des Lebens unter der Voraussetzung von Schöpfung," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 328, sec. 16.5, boxed section; subsection authored by Henrik Ullrich. Quoted passage translated from German.

[19] Stuart Burgess, "Universal Optimal Design in the Vertebrate Limb Pattern and Lessons for Bioinspired Design," *Bioinspiration & Biomimetics* 19, no. 5 (2024): 24; digital file, https://iopscience.iop.org/article/10.1088/1748-3190/ad66a3/pdf : accessed 6 November 2025, https://doi.org/10.1088/1748-3190/ad66a3

[20] Wolf-Ekkehard Lönnig, *The Panda's Thumb: Striking Imperfection or Masterpiece of Engineering? PART 1 and PART 2 in One Document* (self-published, 31 March to 13 June 2024; correction and additions, 11 May 2025, pp. 58–60), 24; digital file, https://www.weloennig.de/PANDA.Part1.pdf : accessed 6 November 2025.

[21] Casey Luskin, "Is the Panda's Thumb a 'Clumsy' Adaptation that Refutes Intelligent Design?" IDEA Center, http://www.ideacenter.org/contentmgr/showdetails.php/id/1477 : accessed 6 November 2025.

Burgess: "When considering the performance of wildcats, it is clear that there is a trade-off between different requirements such as maximum speed and maximum jump height. For example, the cheetah has a design that is focused on maximising speed rather than jump height. In contrast, the snow leopard has a design that focuses more on maximising jump height because the animal must be able to jump large heights to traverse its habitat."[22]

Reeves: "Optimality is contingent on the environment the object or organism is placed within."[23]

Burgess: "The snow leopard has a maximum speed of around 60 kph which is around half the speed of a cheetah, but it is able to jump up to 6 m in height which is around twice that of a cheetah. This illustrates an important principle that limbs are multifunctioning, and some functions are conflicting. Therefore, a trade-off in performance must be made."[24]

Marks II, Dembski & Ewert: "In multi-objective or Pareto design, the critique of a design attribute cannot be made in a vacuum but must be made knowing the entire function of the final product and with consideration of other competing design criteria. Those criticizing design in nature by pointing to a less than optimal isolated performance of, say, the human eye without consideration of the entire physiology are unfamiliar with design and have probably never designed anything complex themselves."[25]

McLatchie: "There are always alternative ways that one can envision in which an engineered system might have been designed differently. Having no experience of designing living organisms ourselves, we should exercise tremendous caution about asserting what a designer *should* or *should not* have done."[26]

Ullrich: "With allegedly 'faulty' structures, the *claim* is merely that there are better constructions than those that have been actualized, but no proof has been provided. For in no case has it so far been possible to construct better-functioning alternatives and to demonstrate their superiority—whether it concerns the wisdom teeth, the ankle joint, the pelvis, the spine, or the retina."[27]

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[22] Stuart Burgess, "Universal Optimal Design in the Vertebrate Limb Pattern and Lessons for Bioinspired Design," *Bioinspiration & Biomimetics* 19, no. 5 (2024): 17; digital file, https://iopscience.iop.org/article/10.1088/1748-3190/ad66a3/pdf : accessed 6 November 2025, https://doi.org/10.1088/1748-3190/ad66a3

[23] Emily Reeves, "Optimization: The Engineering Explanation for 'Evolution Happening Before Our Eyes,'" *Science and Culture Today*, 22 October 2025, https://scienceandculture.com/2025/10/optimization-the-engineering-explanation-for-evolution-happening-before-our-eyes/ : accessed 29 October 2025.

[24] Stuart Burgess, "Universal Optimal Design in the Vertebrate Limb Pattern and Lessons for Bioinspired Design," *Bioinspiration & Biomimetics* 19, no. 5 (2024): 17; digital file, https://iopscience.iop.org/article/10.1088/1748-3190/ad66a3/pdf : accessed 6 November 2025, https://doi.org/10.1088/1748-3190/ad66a3

[25] Robert J. Marks II, William A. Dembski, and Winston Ewert, *Introduction to Evolutionary Informatics*, Kindle edition (Singapore: World Scientific Publishing, 2017), 54–55. Page numbers reflect the Kindle edition mapped to ISBN 9813142146 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "in multi-objective"; for print readers, the page range provides approximate placement.

[26] Jonathan McLatchie, "Is Complexity an Argument Against Design?" *Science and Culture Today*, 28 March 2024, https://scienceandculture.com/2024/03/is-complexity-an-argument-against-design/ : accessed 29 October 2025.

[27] Reinhard Junker, "Deutungen des Lebens unter der Voraussetzung von Schöpfung," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 329, sec. 16.5, boxed section; subsection authored by Henrik Ullrich. Quoted passage translated from German.

Rammerstorfer: "Suboptimality in the sense of defectiveness could only be demonstrated if a demonstrably better solution, providing at least the same level of supply to the rods and cones, without the known or more serious disadvantages, could be made plausible."[28]

Junker: "Claims that some organs are suboptimally constructed and that this is due to evolutionary changes have often proven premature."[29]

Behe: "The argument from imperfection . . . critically depends on a psychoanalysis of the unidentified designer. Yet the reasons that a designer would or would not do anything are virtually impossible to know unless the designer tells you specifically what those reasons are. . . . The point of scientific interest is not the internal mental state of the designer but whether one can detect design."[30]

Woodward: "'Poor design' accusations don't eliminate the design inference, they just criticize it as inferior."[31]

Gonzalez & Richards: "Something can be wicked, wasteful, and inefficient but still be designed."[32]

G. Kemper, H. Kemper, & Luskin: "Even if the wiring of the optic nerve is flawed, there is no reason that should refute intelligent design. . . . Imperfect design is still design."[33]

1.2.2 Biomimetics and Engineering Inspiration from Biological Systems

Tistarelli: "I specialized in studying the human visual system and in devising ways to imitate it for the design of robots."[34]

Coppedge: "The more sophistication that is found in biological engineering, the more scientists want to imitate it."[35]

Tistarelli: "[Our visual system] is incredibly sophisticated, encompassing much more than the eyes. . . .

". . . I could never design a robot capable of catching a ball as we can. A robot can be programmed to catch a ball, but only in precisely controlled conditions. It cannot do so in circumstances for which it has not been programmed. Our ability to learn is vastly superior to that of a machine—and mere

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[28] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 74. Quoted passage translated from German.
[29] Reinhard Junker, "Ähnlichkeiten," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 181. Quoted passage translated from German.
[30] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 223–224.
[31] Thomas Woodward, *Darwin Strikes Back: Defending the Science of Intelligent Design* (Grand Rapids, MI: Baker Books, 2006), 168.
[32] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), 330.
[33] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 132.
[34] Massimo Tistarelli, interview by *Awake!*, "A Designer of Robots Explains His Faith," *Awake!*, February 2013, 10, https://www.jw.org/en/library/magazines/g201302/robot-designer-interview/ : accessed 6 November 2025.
[35] David Coppedge, "As Science Observes, Talk of Evolution Fades," *Science and Culture Today*, 3 March 2025, https://scienceandculture.com/2025/03/as-science-observes-talk-of-evolution-fades/ : accessed 29 October 2025.

machines have makers! This fact is just one of many that led me to conclude that we must have had a Designer."[36]

Lönnig: "The closer we get to the performance of the human eye in the future through further improved and refined technical systems, the greater our respect for the performance of the designers and engineers will be!"[37]

G. Kemper, H. Kemper, & Luskin: "Since the time of the ancient Chinese, engineers have looked to biological designs for inspiration in devising human technology. A modern field called **biomimetics** has found many cases in which engineers turn to biology to improve technology."[38]

Cassell: "The motivation for this field of study is that nature includes numerous designs that appear highly optimized for the given functions."[39]

Rammerstorfer: "When comparing organisms with human technology, one notices remarkable similarities. Even the superficial similarity between a camera and lens eyes stimulates thoughts about planning: Both are complicated devices that are similar in some aspects—if the camera is created, why not the eye? And if one digs a little deeper, one notices that organisms and human technology are not only similar in many aspects, but both are highly teleological in their structure."[40]

Zinsmeister: "As a mechanical design educator, I view even natural things from a design perspective. Mechanical design considers not only the individual components of a machine but also how they interact. From this viewpoint, human vision is a magnificent example of design. . . . To me, the sheer complexity of how all these components interact is evidence of a superior designer. Some disagree. They propose that the eye evolved from a light-sensitive patch in some ancestral creature through small random changes. I find the proposed process unrealistic. Unlike design, it is unplanned and without a goal. We are asked to imagine that a complex system can develop without direction, while in the natural world things tend to become disorganized."[41]

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[36] Massimo Tistarelli, interview by *Awake!*, "A Designer of Robots Explains His Faith," *Awake!*, February 2013, 10–11, https://www.jw.org/en/library/magazines/g201302/robot-designer-interview/ : accessed 6 November 2025.

[37] Wolf-Ekkehard Lönnig, "Neuere Behauptungen," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIINeBe.html : accessed 3 November 2025. Quoted passage translated from German.

[38] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 135.

[39] Eric Cassell, *Animal Algorithms: Evolution and the Mysterious Origin of Ingenious Instincts* (Seattle: Discovery Institute Press, 2021), 174.

[40] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 97. Quoted passage translated from German.

[41] "Why We Have Faith in . . . God's Existence," featuring George Zinsmeister, *JW.org*, video, 1:02–2:50, https://www.jw.org/en/library/videos/miscellaneous-videos/why-we-have-faith-in-gods-existence/ : accessed February 20, 2025.

Section 2

2.1 Dialogue in *Reason in the Balance*:

Juanita: You know the old story that millions of monkeys slaving away endlessly on computers would never write a play of Shakespeare?

Winnie: I agree—they wouldn't. But that's not Darwin's theory. I think we should make an inquiry into the theory of evolution and see just what the issues are, what the history of this debate is, and what the evidence is pro and con.

Stephen: Sure. I'm glad to take on evolution.[42]

2.2 Extended Dialogue

2.2.1 The Shakespeare Analogy and the Displacement Fallacy

Dembski: "Consider an exchange I . . . had with Eugenie Scott back in 2001 on the campus of Stanford University. Peter Robinson was interviewing us for his program *Uncommon Knowledge*. Robinson raised the trope about monkeys randomly typing Shakespeare if given enough time, and he then asked how it related to Darwin's theory. Scott, president at the time of the National Center for Science Education and an ardent opponent of intelligent design, responded by saying that in trying to account for how a monkey could type Shakespeare, natural selection's role would be that of a technician with whiteout standing behind the monkey where 'every time the monkey types the wrong letter, [the technician] correct[s] it. That's what natural selection basically does. It's not just the random production of variation.'"[43]

Wells & Dembski: "Although Scott's error-correction approach to overcoming randomness sounds plausible, it is in fact deeply confused. . . . The whole point of having monkeys at a typewriter is to account for the emergence of Shakespeare's works without the need to invoke an intelligence (like Shakespeare) that already knows Shakespeare's works. In other words, the whole point was to get Shakespeare's works without Shakespeare. But that's not what is happening here. *Clearly, the only way to erase errors in the typing of Shakespeare's works is to know Shakespeare's works in the first place.* Indeed, the very concept of error presupposes that there is a right way that things ought to be. That's the problem: Eugene Scott's technicians, to do their work, need already to know the works of Shakespeare."[44]

Dembski: "Where exactly do you find a technician who knows enough about the works of Shakespeare to white out mistakes in the typing of Shakespeare? What are the qualifications of this technician?

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[42] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 309.
[43] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 397–398.
[44] William A. Dembski and Jonathan Wells, *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), 179–180.

How does the technician know what to erase? Scott never said. That is displacement: The monkey's success at typing Shakespeare is explained, but at the cost of leaving the technician who corrects the monkey's typing unexplained."[45]

"Darwinian approaches to biological evolution and evolutionary computing sought to explain the origin of information through some process that directly used or else mimicked natural selection. Yet rather than admit a fundamental gap in explanation, this literature simply invoked selection as a backstop to explain the origin of information, the backstop itself being exempt from further explanation."[46]

Lönnig: "It is neo-Darwinism that has created a *deus ex machina* with its factor system of mutation and selection. Wherever the origin of a complex structure, the origin of a synorganized system and the emergence of new blueprints are discussed, this factor system is inserted into the knowledge gap without evidence and thus the problem is considered to be explained in principle."[47]

Dembski: "The move to explain the origin of information by invoking some separate unexplained source of information, typically via a selection process, was so common in the evolutionary literature that it deserved its own name: *displacement*. *Displacement*, in general, may be defined as explaining one item of information by invoking another unexplained item of information, thereby leaving the original item of information unexplained."[48]

[45] William A. Dembski, "The Law of Conservation of Information: Search Processes Only Redistribute Existing Information," *BIO-Complexity* 2025, no. 2: 16; digital file, https://bio-complexity.org/ojs/index.php/main/article/view/BIO-C.2025.2/BIO-C.2025.2 : accessed 6 November 2025, https://doi.org/10.5048/BIO-C.2025.2

[46] William A. Dembski, "The Law of Conservation of Information: Search Processes Only Redistribute Existing Information," *BIO-Complexity* 2025, no. 2: 16; digital file, https://bio-complexity.org/ojs/index.php/main/article/view/BIO-C.2025.2/BIO-C.2025.2 : accessed 6 November 2025, https://doi.org/10.5048/BIO-C.2025.2

[47] Wolf-Ekkehard Lönnig, correspondence to Prof. D. (pseudonym) and Prof. C. (pseudonym), 6 September 1994, published in "9) Stellungnahme von Prof. D. (oder wie der Neodarwinismus die Wahrnehmung einfachster Tatbestände verhindert)," in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/Wahrnehmung.html : accessed 4 November 2025. Quoted passage translated from German.

[48] William A. Dembski, "The Law of Conservation of Information: Search Processes Only Redistribute Existing Information," *BIO-Complexity* 2025, no. 2: 16; digital file, https://bio-complexity.org/ojs/index.php/main/article/view/BIO-C.2025.2/BIO-C.2025.2 : accessed 6 November 2025, https://doi.org/10.5048/BIO-C.2025.2

Section 3

3.1 Dialogue in *Reason in the Balance*:

Winnie: OK. So let's get clear on the issue. The question is whether the natural world is the result of divine creation or the result of a process of evolution and natural selection as Darwin argued.

Stephen: Natural selection, whatever that is, versus God's creation as an explanation of the natural world.[49]

3.2 Extended Dialogue

3.2.1 What Natural Selection Does and the Central Question of Its Creative Power

Behe: "It is safe to say that virtually no one in science today denies simple natural selection: if a sufficiently useful variant occurs in a population, probability favors its increase."[50]

Egnor: "We know intuitively that Darwinism can accomplish some things, but not others. The question is what is that boundary?"[51]

Johnson: "The question is *not* whether natural selection occurs. Of course it does, and it has an effect in maintaining the genetic fitness of a population. . . . Darwinism asserts a great deal more than merely that species avoid genetic deterioration due to natural attrition among the genetically unfit. Darwinists claim that this same force of attrition has a building effect so powerful that it can begin with a bacterial cell and gradually craft its descendants over billions of years to produce such wonders as trees, flowers, ants, birds, and humans."[52]

"The hypothesis, to be precise, is that natural selection (in combination with mutation) is an innovative evolutionary process capable of producing new kinds of organs and organisms. That brings us to the critical question: what evidence confirms that this hypothesis is true?"[53]

"Natural selection is the most famous element in Darwinism, but it is not necessarily the most

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[49] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 309.
[50] Michael J. Behe, *Darwin Devolves: The New Science About DNA That Challenges Evolution*, Kindle edition (HarperOne, 2024), 84. Page number reflects the Kindle edition mapped to ISBN 0062842617 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "it is safe"; for print readers, the page number provides approximate placement.
[51] Michael Egnor, "Dr. Michael Egnor professor of neurosurgery and pediatrics at State University of New York, Stony Brook," Dissent from Darwin, February 13, 2019, https://dissentfromdarwin.org/2019/02/13/dr-michael-egnor-professor-of-neurosurgery-and-pediatrics-at-state-university-of-new-york-stony-brook/ : accessed 14 July 2025.
[52] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 16.
[53] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 25.

important element. Selection merely preserves or destroys something that already exists."[54]

Lönnig: "Selection cannot, in principle, produce anything new; it can only sift out what already exists."[55]

"Natural selection . . . only acts like a sieve which selects (screens) tea leaves from a certain size onwards but, of course, ***sieves never create the tea leaves*** themselves."[56]

3.2.2 The Role of Chance in Evolution

Johnson: "Mutation has to provide the favorable innovations before natural selection can retain and encourage them."[57]

Spetner: "Because evolutionary theory has randomness at its core, the primary requirement for the theory is to show that the probability of evolution actually building up the required information in this manner is reasonably large."[58]

Gauger: "Evolutionists often challenge us for referring to Darwinian evolution as 'random.' . . .

"Evolution can be considered to be composed of four parts. The first part, the grist for the mill, is the process by which *mutations* are generated. Generally this is thought to be a *random* process, with some qualifications. . . .

"The next part, *random drift*, is like a roll of the dice that decides which changes are preserved and which are lost. As the name implies, this process is also *random*, the result of accidental events, and without regard for the benefit of the organism. . . .

"The third part, *natural selection*, is *not random*. . . .

". . . Natural selection does not always select the same mutations. The environment determines which mutations are favored. . . . Different populations get favored at different times. In this sense one might say *selection has a random component* too, because only rarely is selection strong and unidirectional, always favoring the same mutation. . . .

". . . Mutation, drift, selection, and environmental change all play a role. Three out of these four forces are random, without regard for the needs of the organism. Even selection can be random in its

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[54] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 31.
[55] Wolf-Ekkehard Lönnig, *Ursprung und Entwicklung des Pflanzenreichs im Spiegel älterer und moderner Auffassungen: Kritische Betrachtung unter Auswahl geeigneter Beispiele* (MSc thesis, Free University of Berlin, 1971), 43 (PDF pagination); digital file, weloennig.de/Staatsexamensarbeit.pdf : accessed 7 November 2025. Quoted passage translated from German. The PDF version consulted includes addenda not present in the original thesis.
[56] Wolf-Ekkehard Lönnig, *The Evolution of the Long-Necked Giraffe (Giraffa camelopardalis L.): What Do We Really Know? Testing the Theories of Gradualism, Macromutation, and Intelligent Design* (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2011), 109 [PDF p. 121]; digital file, https://ad-multimedia.de/evo/long-necked-giraffe_mU.pdf : accessed 4 November 2025.
[57] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 31.
[58] Lee M. Spetner, *The Evolution Revolution: Why Thinking People Are Rethinking the Theory of Evolution* (Brooklyn, NY: Judaica Press, 2014), 24.

direction, depending on the environment."[59]

Lönnig: "Hiding places of predator and prey, the distances between them, local differences of biotopes and geographical circumstances, weather conditions and microclimates all belong to the repertoire of infinitely varying parameters. Coincidences, accidents, and chance occurrences are strongly significant in the lives of all individuals and species."[60]

"Natural selection is limited by ever occurring random events."[61]

Rammerstorfer: "Environmental conditions are never static and change in the long term in unpredictable ways."[62]

Gauger: "So tell me. Is evolution random? Most of the processes at work definitely are."[63]

Lönnig: "There can be no doubt that there is a strong element of chance in natural selection."[64]

[59] Ann Gauger, "Is Evolution Random? Answering a Common Challenge," *Science and Culture Today*, 26 October 2015, https://scienceandculture.com/2015/10/is_evolution_ra/ : accessed 29 October 2025.
[60] Wolf-Ekkehard Lönnig, *On the Limits of Natural Selection: The Original Article and all Relevant Posts as well as the Link to the Supplementary Podcast now in One Document* (Cologne, 31 July/4 August 2016; includes reprint of "Natural Selection" from *The Corsini Encyclopedia of Psychology and Behavioral Science*, vol. 3 [2001], 1008–1016), 3; digital file, https://www.weloennig.de/jfterrorchipmunks.pdf : accessed 7 November 2025.
[61] Wolf-Ekkehard Lönnig, *Plant Galls and Evolution (II): Natural Selection, DNA, and Intelligent Design* (10 and 21 August 2020; minor corrections 22 August 2020), 45; digital file, https://www.weloennig.de/PlantGalls.xyz.pdf : accessed 10 November 2025.
[62] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 59, quoted from boxed section. Quoted passage translated from German.
[63] Ann Gauger, "Is Evolution Random? Answering a Common Challenge," *Science and Culture Today*, 26 October 2015, https://scienceandculture.com/2015/10/is_evolution_ra/ : accessed 29 October 2025.
[64] Wolf-Ekkehard Lönnig, *Plant Galls and Evolution (II): Natural Selection, DNA, and Intelligent Design* (10 and 21 August 2020; minor corrections 22 August 2020), 45; digital file, https://www.weloennig.de/PlantGalls.xyz.pdf : accessed 10 November 2025.

Section 4

4.1 Dialogue in *Reason in the Balance*:

Winnie: Now you need to know that Darwin's theory is not that humans and other species were created by blind chance, some kind of cosmic fluke. That's not the theory of natural selection.

Juanita: It's not?

Winnie: No, it isn't. In his book *On the Origin of Species*, Darwin goes into the argument in depth, laying out his evidence in great detail and constantly addressing objections. It's really a fantastic study in argumentation. All I can give you now is a fairly crude summary of his argument. You should read the book.

Juanita: Sounds kind of heavy.[65]

4.2 Extended Dialogue

4.2.1 Reading Darwin with Critical Counter-Literature

Lönnig: "I consider it materialistic indoctrination to recommend Darwin's text to readers who are not yet biologically trained, who – in view of the still little knowledge of biological facts and connections – must almost necessarily fall for a Darwinian masterpiece of persuasion . . . and this because they can hardly oppose it, but the idea is inculcated in them with the suggestive power of the gifted 'rhetorician' – indoctrination, if one does not recommend adequate critical literature on it at the same time!"[66]

"I would like to recommend the intensive, serious and unprejudiced study of the literature critical of neo-Darwinism and evolution."[67]

Johnson: "Increasing numbers of high-school and college students come to the classroom already knowing that there are reasonable grounds for dissent, advocated by persons . . . with impressive scientific and academic credentials. . . .

". . . Many thousands of high-school and college students are reading our literature, and are responding very favorably. . . . Once independent-thinking young people have read the dissenting

[65] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 310.
[66] Wolf-Ekkehard Lönnig, Appendix N–Z (descriptive title), in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIAbII.html : accessed 3 November 2025. Quoted passage translated from German.
[67] Wolf-Ekkehard Lönnig, correspondence to Prof. D. (pseudonym) and Prof. C. (pseudonym), 6 September 1994, published in "9) Stellungnahme von Prof. D. (oder wie der Neodarwinismus die Wahrnehmung einfachster Tatbestände verhindert)," in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/Wahrnehmung.html : accessed 4 November 2025. Quoted passage translated from German.

literature, they are not likely to be impressed with the evasive statements of the Darwinist establishment."[68]

4.2.2 Darwin's Method: Logic, Rhetoric, and the Weight of Argument

Flannery: "One modern analyst, Howard E. Gruber, [says,] 'He [Darwin] did not work on "Baconian principle," if that means collecting facts and then drawing conclusions; nor did he work in a "deductive spirit" . . . . Nor did he carry out these steps in some other sequence that might be deemed scientifically or logically prudent.' . . . Gruber goes on to admit that an examination of Darwin's private notebooks makes it clear that 'his actual way of working . . . would never have passed muster in a methodological court of inquiry among Darwin's scientific contemporaries.'"[69]

Wells: "Since Darwin's view was primarily a philosophical doctrine rather than an empirical inference, its success depended less on marshalling evidence than on winning a war of ideas."[70]

Joshua: The historian Gertrude Himmelfarb wrote, "It was probably less the weight of the facts than the weight of the argument that was impressive. The reasoning was so subtle and complex as to flatter and disarm all but the most wary intelligence. Only upon close inspection do the faults of the theory emerge."[71]

Flannery: "Coherent and masterful logical exposition should not be conflated with rhetorical sleight of hand."[72]

Hunter: "When Darwin proposed his theory, a number of the evidences and arguments he presented were hardly compelling. He argued, for example, that the fossils failed to reveal evolution because the fossil record was incomplete; that the failure of breeders to produce anything beyond small-scale change was caused by their artificial selection; and that the failure of his theory to explain complexity was not a problem because critics could not *prove* natural mechanisms to be incapable of producing complexity. None of these arguments was particularly powerful, but Darwin did bring powerful metaphysical arguments to bear. Over and over, his arguments drew their persuasiveness from the religious sentiment of the day."[73]

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[68] Phillip E. Johnson, "The Wedge: Breaking the Modernist Monopoly on Science," *Access Research Network*, 1999, https://arn.org/docs/johnson/le_wedge.htm : accessed 26 December 2025.
[69] Michael Flannery, "A New Book Poses the Question: At the Birth of Modern Science, Was Darwin Present — or AWOL?" *Science and Culture Today*, 10 April 2012, https://scienceandculture.com/2012/04/at_the_birth_of/ : accessed 29 October 2025.
[70] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 202–203.
[71] Gertrude Himmelfarb, *Darwin and the Darwinian Revolution: A Biographical, Historical, and Philosophical Study of the Impact of Darwinism on the Intellectual Climate of the Nineteenth Century* (New York: W. W. Norton, 1968), 350.
[72] Michael Flannery, "Darwin's Origin of Species — Some Historical Reflections 160 Years Later," *Science and Culture Today*, 24 November 2019, https://scienceandculture.com/2019/11/darwins-origin-of-species-some-historical-reflections-160-years-later/ : accessed 29 October 2025.
[73] Cornelius G. Hunter, "Why Evolution Fails the Test of Science," in William A. Dembski, ed., *Uncommon Dissent: Intellectuals Who Find Darwinism Unconvincing* (Wilmington, DE: ISI Books, 2004), 212.

4.2.3 Theology in Evolutionary Debate

Sewell: "Darwin frequently used 'God wouldn't do things this way' as an argument against design in his *Origin of Species*. And opposition today is still fueled in large part by the theological questions 'Why would God…' or 'Why wouldn't God…' Of course speculation as to why God would or would not do something is theology, not science, so we can never be sure if our speculation is correct or not. But ID opponents engage in a lot of theological speculation."[74]

G. Kemper, H. Kemper, & Luskin: "Materialists would be well-advised to spend more time studying the details of the biological world, and less time speculating about what God would or wouldn't have done."[75]

Gonzalez & Richards: "A number of popular objections to contemporary design arguments are basically theological objections, and most of these reduce to a single, simple complaint: "*God wouldn't do it that way*." As a response to design arguments, this is a red herring. We must distinguish between an argument for design and an argument for the existence of God. While a successful argument for the design of the cosmos provides support for belief in the existence of God, it doesn't prove that the God of traditional belief exists. The most it establishes is that there is a designer sufficient to design the universe as we see it. . . .

"Of course, there's nothing wrong with moving from specifically scientific inferences into theological reflection, but we should be aware of what we're doing. Ironically, theological arguments of this sort often come from those who insist that science cannot consider questions of purpose and design. As a mere matter of logic, they can't have it both ways."[76]

Nelson: "The persistence of Darwinian theological themata in current evolutionary theory is prima facie inconsistent with the doctrine of methodological naturalism."[77]

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[74] Granville Sewell, "Jerry Coyne Asks a Good Question," *Science and Culture Today*, 20 February 2020, https://scienceandculture.com/2020/02/jerry-coyne-asks-a-good-question/ : accessed 29 October 2025.
[75] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 139.
[76] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), 330.
[77] Paul A. Nelson, "Jettison the Arguments, or the Rule?: The Place of Darwinian Theological Themata in Evolutionary Reasoning," *Access Research Network*, 1998, https://www.arn.org/docs/nelson/pn_jettison.htm : accessed 1 September 2025.

Section 5

5.1 Dialogue in *Reason in the Balance*:

Stephen: You can just give us the short version [Winnie].

Winnie: The first thing Darwin points out is how animal breeders are able to breed dramatically different creatures than what they start with. Look at the incredible variety of dogs which are produced by human breeding. Since there's such variability in offspring that breeders can modify breeds through "human selection," nature can do the same thing through "natural selection." A chance variation in new generations that gives a creature an advantage in a particular environment will tend to help that creature prosper and reproduce, and those that don't have the advantage will tend to die off. This is true of both plants and animals. So that's his theory: species change and are created by a slow incremental process of natural selection favoring some variations over others. The process involves literally billions of years.

Juanita: That's pretty amazing.[78]

5.2 Extended Dialogue

5.2.1 Deep Time and the Illusion of Unlimited Possibility

Spetner: "They think the earth's age is long enough for anything to have happened. When one deals with events having small probabilities and many trials, one should multiply the two numbers to determine the probability. One should not just stand gaping at the long time available for trials, ignore the small probability, and conclude that anything can happen in such a long time. One has to calculate."[79]

Lönnig: "Without the connection to the limited numbers of individuals, populations, mutations and realistic times on our planet, many an evolutionary problem seems statistically solvable, *but not under the limited realistic conditions on our earth*."[80]

Spetner: "Without a calculation showing the probabilities to be *significant*, evolution is no more than a collection of stories. . . . Stories do not establish a scientific theory."[81]

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[78] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 310.

[79] Lee M. Spetner, *Not by Chance!: Shattering the Modern Theory of Evolution* (New York: Judaica Press, 1998), 166.

[80] Wolf-Ekkehard Lönnig, correspondence to Dr. V. (pseudonym), 29 November 2000, published in Wolf-Ekkehard Lönnig, *Diskussion von Einwänden zu dem Artikel "Hoimar von Ditfurth und der Lederbergsche Stempelversuch: Sind Antibiotikaresistenzen ein Beweis für die Makroevolution im Labor?"*, https://www.weloennig.de/Bakterienresistenzen.html, accessed 17 November 2025. Quoted passage translated from German.

[81] Lee M. Spetner, *The Evolution Revolution: Why Thinking People Are Rethinking the Theory of Evolution* (Brooklyn, NY: Judaica Press, 2014), 25.

Remine: "Evolutionists commonly overlook or distort probability science. . . .

"They overlook probability by automatically *assuming* there is enough time available to overcome any problem. They underestimate how quickly probability can become an obstacle, even on a cosmic time scale."[82]

Bethell: "Evolutionists rescue their own theory by taking refuge in 'deep time.'"[83]

Lönnig: "The usual 'talking out about the effect of time' in such places is a completely unfounded and unscientific evasive manoeuvre as long as one does not know the probability structure of the events and changes that take place during this time."[84]

5.2.2 Probability Barriers

Bethell: "Molecular biologist Douglas Axe . . . has shown that generating even just one new protein by mutating DNA at random has a prohibitively small chance of ever occurring even on the scale of evolutionary deep time."[85]

Dembski & Ewert: "In the 2000s, [Douglas Axe] analyzed one of the domains making up beta-lactamase, and published the findings in the *Journal of Molecular Biology*. . . . Axe, through a combination of experimental work and theoretical analysis, estimated the probability of obtaining a functional domain of this protein to be around 1 in 10^{77}."[86]

Meyer: "Scientists have estimated that a total of about 10^{40} organisms have lived on earth since life first appeared. Axe made the assumption that each new organism received one new sequence of bases (one potential gene) capable of generating one of the possible amino-acid sequences in sequence space per generation.

"This was an extremely generous assumption. Since mutations have to be quite rare for life to survive, most bacterial cells inherit an exact copy of their parent's DNA. Furthermore, the ones that differ from their parents are likely to carry a mutation that has already occurred many times in other cells. For these reasons, the actual number of new sequences sampled in the history of life is much lower than the total number of bacterial cells that have existed. Nevertheless, Axe assumed that one new gene per organism has been transmitted to the next generation. Thus, he used 10^{40} gene sequences as a liberal estimate of the total number of gene sequences (evolutionary trials) that have been generated to search sequence space in the history of life.

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[82] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 74.
[83] Tom Bethell, "In the Context of Human Artifacts, Something Like Darwinian Evolution Actually Does Happen," *Science and Culture Today*, 14 May 2013, https://scienceandculture.com/2013/05/tk/ : accessed 29 October 2025.
[84] Wolf-Ekkehard Lönnig, "Neuere Behauptungen," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIINeBe.html : accessed 3 November 2025. Quoted passage translated from German.
[85] Tom Bethell, "Darwinism and Materialism: They Sink or Swim Together," *Discovery Institute*, 18 September 2013, https://www.discovery.org/a/21921/ : accessed 29 October 2025.
[86] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 372–373.

"Even so, 10^{40} represents only a tiny fraction—1 ten trillion, trillion, trillion*th*—of 10^{77}."[87]

Dembski & Ewert: "A probability of ½ constitutes an important cutoff in assessing the chance occurrence of events in light of a given set of probabilistic resources. . . . Events whose probabilities are less than ½, even when all relevant probabilistic resources are factored in, are less likely than not to happen, and therefore should not be expected to happen."[88]

Joshua: So, according to these calculations, getting a protein with a beta-lactamase antibiotic-resistant function by an undirected process is not likely to happen.

Ewert & Dembski: "Darwinists argue that Axe's probabilistic analysis omitted some crucial Darwinian evolutionary pathways to beta-lactamase from some prior protein/domain having a different structure and function. Factor in these as yet unknown pathways, and the small probability Axe calculated will disappear. . . .

"For Darwinists, because such pathways, even if unidentified, assuredly exist, the probabilities cannot be as small as Axe made them out to be. It's just that Axe's analysis somehow missed them. The sparsity of functional folds is thus, for them, largely irrelevant."[89]

Dembski: "Whatever fitness landscapes and other conditions on evolvability are needed to bring about a system like Douglas Axe's beta-lactamase, if those conditions raise the probability of success of evolving such a system, those conditions themselves become highly improbable and require explanation."[90]

Meyer: "I didn't want to know just the likelihood of finding a protein with a particular function within a space of combinatorial possibilities. I wanted to know the odds of finding *any* functional protein whatsoever within such a space. . . .

"Fortunately, Axe's work provided this number as well."[91]

Luskin: "Axe's research found that amino acid sequences which yield stable, functional protein folds may be as rare as 1 in 10^{74} sequences, suggesting that the vast majority of amino acid sequences will not produce stable proteins, and thus could not function in living organisms.

"Because of this extreme rarity of functional protein sequences, it would be very difficult for random mutations to take a protein with one type of fold, and evolve it into another, without going through some non-functional stage. Rather than evolving by 'numerous, successive, slight modifications,' many changes would need to occur *simultaneously* to 'find' the rare and unlikely amino acid sequences that

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[87] Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (New York: HarperOne, 2013), 203.
[88] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 193.
[89] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 374–375.
[90] William A. Dembski, "The Law of Conservation of Information: Search Processes Only Redistribute Existing Information," *BIO-Complexity* 2025, no. 2: 34; digital file, https://bio-complexity.org/ojs/index.php/main/article/view/BIO-C.2025.2/BIO-C.2025.2 : accessed 6 November 2025, https://doi.org/10.5048/BIO-C.2025.2
[91] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 210.

yield functional proteins."[92]

Woodward: "Such folded proteins are not like little islands in an archipelago, allowing a short leap from one functional island to the next. Rather, proteins are so isolated from each other in their sequences that they have been compared with islands that are light-years apart from each other in the mathematical multidimensional 'phase space,' which models the space proteins would have to move through to be mutated and morphed successfully."[93]

Bradley, Olsen, & Thaxton: "A typical protein would have 100 to 300 amino acids in a specific sequence."[94]

Axe: "Cellular functions often require large proteins."[95]

Meyer: "Axe's improved estimate of how rare functional proteins are within 'sequence space' has now made it possible to calculate the probability that a 150-amino-acid compound assembled by random interactions in a prebiotic soup would be a functional protein. This calculation can be made by multiplying three independent probabilities by one another: the probability of incorporating only peptide bonds (1 in 10^{45}), the probability of incorporating only left-handed amino acids (1 in 10^{45}) and the probability of achieving correct amino acid sequencing (using Axe's 1 in 10^{74} estimate). Making that calculation (multiplying the separate probabilities by adding their exponents: $10^{45+45+74}$) gives a dramatic answer. The odds of getting a functional protein of modest length (150 amino acids) by drawing a compound of that size from a prebiotic soup is no better than 1 chance in 10^{164}."[96]

"[Dembski] noted that there were about 10^{80} elementary particles in the observable universe. He also noted that there had been roughly 10^{16} seconds since the Big Bang. He then introduced another parameter: the shortest time in which any physical event can occur. This unit of time is the Planck time of 10^{-43} seconds. Since elementary particles can only interact with each other so many times per second (at most 10^{43} times), and since there are a limited number (10^{80}) of elementary particles, and since there has been a limited amount of time since the Big Bang (10^{16} seconds), Dembski was able to calculate the total number of events that could have taken place in the observable universe since the origin of the universe. He obtained this number by simply multiplying the three relevant factors together: the number of elementary particles (10^{80}) times the number of seconds since the Big Bang (10^{16}) times the number of possible interactions per second (10^{43}). The product, i.e., 10^{139}, provided a measure of the probabilistic resources of the entire observable universe.

". . . For each functional sequence of 150 amino acids, there are 10^{164} other non-functional sequences of the same length. Therefore, to have a good (i.e., better than 50/ 50) chance of producing a single functional protein of this length by chance, a random process would have to generate (or sample)

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[92] Casey Luskin, "Problem 3: Step-by-Step Random Mutations Cannot Generate the Genetic Information Needed for Irreducible Complexity," *Science and Culture Today*, 12 January 2015, https://scienceandculture.com/2015/01/problem_3_rando/ : accessed 29 October 2025.

[93] Thomas Woodward, *Darwin Strikes Back: Defending the Science of Intelligent Design* (Grand Rapids, MI: Baker Books, 2006), 82–83.

[94] Charles B. Thaxton, Walter L. Bradley, and Roger L. Olsen, in Charles B. Thaxton, Walter L. Bradley, Roger L. Olsen, James Tour, Stephen Meyer, Jonathan Wells, Guillermo Gonzalez, Brian Miller, and David Klinghoffer, *The Mystery of Life's Origin: The Continuing Controversy*, Part 1 (Seattle: Discovery Institute Press, 2020), 195.

[95] Douglas D. Axe, "The Case Against a Darwinian Origin of Protein Folds," 4, https://www.bio-complexity.org/ojs/index.php/main/article/view/BIO-C.2010.1 : accessed 6 May 2025.

[96] Stephen C. Meyer, "Evidence of Intelligent Design in the Origin of Life," in Charles B. Thaxton, Walter L. Bradley, Roger L. Olsen, James Tour, Stephen Meyer, Jonathan Wells, Guillermo Gonzalez, Brian Miller, and David Klinghoffer, *The Mystery of Life's Origin: The Continuing Controversy* (Seattle: Discovery Institute Press, 2020), 434.

more than half of the 10^{164} non-functional sequences corresponding to each functional sequence of that length. Unfortunately, as we see from Dembski's calculation, that number vastly exceeds the most optimistic estimate of the probabilistic resources of the universe, i.e., 10^{139}.[97]

Tour: "If the first cells were relatively simple, they still required at least 256 protein-coding genes. This requirement is as close to an absolute as we find in synthetic chemistry."[98]

Meyer: "If we assume that a minimally complex cell needs at least 250 proteins of, on average, 150 amino acids and that the probability of producing just one such protein is 1 in 10^{164} . . . , then the probability of producing all the necessary proteins needed to service a minimally complex cell is 1 in 10^{164} multiplied by itself 250 times, or 1 in $10^{41,000}$. This kind of number allows a great amount of quibbling about the accuracy of various estimates without altering the conclusion."[99]

"Natural selection occurs only in organisms capable of reproducing or replicating themselves. Yet, in all extant cells, self-replication depends on functional and, therefore, sequence-specific DNA and protein molecules."[100]

5.2.3 The Irreducible Complexity of the First Life

Hwang: "The more I thought about the origin of life, the more I became convinced that the first living thing must have been very complex. For example, it had to be able to reproduce, which requires genetic information and a mechanism for accurately replicating that information."[101]

Meyer: "You can't use natural selection to explain the origin of DNA without assuming the existence of the very thing you are trying to explain."[102]

"The concept of prebiotic natural selection begs the question of how nature generated the sequence-specific information-rich DNA and proteins that are needed to make self-replication, and thus natural selection, possible."[103]

Hwang: "Even the simplest living cell needs molecular machines for building all the parts of a new cell, as well as the means to harness and direct energy. How could such complex mechanisms assemble randomly from nonliving matter? As a mathematician, I could not accept that assumption. It asks far

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[97] Stephen C. Meyer, "Evidence of Intelligent Design in the Origin of Life," in Charles B. Thaxton, Walter L. Bradley, Roger L. Olsen, James Tour, Stephen Meyer, Jonathan Wells, Guillermo Gonzalez, Brian Miller, and David Klinghoffer, *The Mystery of Life's Origin: The Continuing Controversy* (Seattle: Discovery Institute Press, 2020), 435.

[98] James Tour, "An Open Letter to My Colleagues," *Inference: International Review of Science* 3, no. 2 (August 2017), https://inference-review.com/article/an-open-letter-to-my-colleagues : accessed 7 November 2025.

[99] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 213.

[100] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 274.

[101] Gene Hwang, interview by *Awake!*, "A Mathematician Explains His Faith," *Awake!*, November 2015, 11, https://www.jw.org/en/library/magazines/g201511/mathematics-scientist-believe-in-god/ : accessed 7 November 2025.

[102] Stephen C. Meyer, "Chance & Natural Selection," chapter 9, in *Unlocking the Mystery of Life: The Scientific Case for Intelligent Design*, directed by Lad Allen and Timothy Eaton (La Mirada, California: Illustra Media, 2002), DVD, timestamp 45:48–45:56.

[103] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 275.

too much of random processes."[104]

Ewert & Dembski: "Take the genetic machinery that uses DNA to produce proteins. . . . This entire genetic machinery contains not just a minimally irreducibly complex core, but consists of nested irreducibly complex systems. . . .

". . . In the origin-of-life literature, one will read speculations about how the present genetic machinery . . . may have evolved from simpler genetic machinery based on codons of two nucleotides. But all such speculation is evidence-free. In the genetic machinery as we know it, we have an immense minimally irreducibly complex system that is necessary for life. We lack plausible precursors because those precursors—at least those so far identified—would not exist without that machinery. Any probability model for this machinery based on known parts composing it thus requires these parts to come together simultaneously and de novo. The probabilities will perforce be ludicrously small, thus mandating a design inference.

". . . It would be a coup indeed if origin-of-life biology could find a detailed Darwinian evolutionary account of how the genetic machinery in all cells might have evolved from a much simpler genetic machinery capable of sustaining life."[105]

5.2.4 DNA as Information and the Case for Intelligence

Meyer: "We . . . know that intelligent agents can produce complex functionally integrated systems specifically for processing information. . . . We also know of no other type of cause that has these capacities. Intelligence is the *only known cause* of complex functionally integrated information-processing systems. It follows . . . that intelligent design stands as the best—most causally adequate—explanation for this feature of the cell, just as it stands as the best explanation for the origin of the information presented in DNA itself."[106]

Flew: "What I think the DNA material has done is that it has shown, by the almost unbelievable complexity of the arrangements which are needed to produce (life), that intelligence must have been involved in getting these extraordinarily diverse elements to work together."[107]

Thaxton: "It is important to understand that we are not reasoning by analogy. The sequence hypothesis [that the exact order of symbols records the information] applies directly to the protein and the genetic text as well as to written language and therefore the treatment is mathematically identical."[108]

Meyer: "The design argument developed here does not rely on a comparison of similar effects, but

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[104] Gene Hwang, interview by *Awake!*, "A Mathematician Explains His Faith," *Awake!*, November 2015, 11, https://www.jw.org/en/library/magazines/g201511/mathematics-scientist-believe-in-god/ : accessed 7 November 2025.
[105] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 391-393.
[106] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 346.
[107] Antony Flew, *There Is a God: How the World's Most Notorious Atheist Changed His Mind*, with Roy Abraham Varghese (New York: HarperOne, 2007), 75.
[108] Charles Thaxton, "A New Design Argument," *Discovery Institute*, 1 September 1994, https://www.discovery.org/a/137/ : accessed 29 October 2025.

upon the presence of a single kind of effect—specified information—and an assessment of the ability of competing causes to produce that effect. The argument does not depend upon the *similarity* of DNA to a computer program or human language, but upon the presence of an *identical* feature in both DNA and intelligently designed codes, languages, and artifacts."[109]

Thaxton: "There is an identity of structure between DNA (and protein) and written linguistic messages. Since we know by experience that intelligence produces written messages, and no other cause is known, the implication, according to the abductive method, is that intelligent cause produced DNA and protein. The significance of this result lies in the security of it, for it is much stronger than if the structures were merely similar. We are not dealing with anything like a superficial resemblance between DNA and a written text. We are not saying DNA is like a message. Rather, DNA is a message."[110]

Davis & Kenyon: "Since both written language and DNA have that telltale property of information carried along by specific sequences of 'words,' and since intelligence is known to produce written language, is it not reasonable to identify the cause of the DNA's information as an intelligence too?"[111]

5.2.5 Functional Constraints on Evolutionary Innovation

Axe: "Ann Gauger and I have . . . challenged Darwin's engine. . . .

". . . All we did was ask whether Darwin's engine can alter a single gene in bacterial cells so that its instructions specify a modified version of the original protein that performs a new task."[112]

Gauger: "We chose to examine how hard it would be to get a modern-day enzyme to switch to the chemistry of a closely related modern-day enzyme, with very similar structures and catalytic mechanisms.

". . . We reasoned that if these two enzymes could not be reconfigured through a gradual process of mutation and selection, then the Darwinian explanation of gene duplication and gradual divergence to new functions was called into question."[113]

Axe: "Darwin's engine proved to be the little engine that couldn't… certainly not in the few billion years in which it is supposed to have done everything, and probably not even in a few *trillion* years."[114]

"We haven't seen a convincing case that *any* evolutionary transition from one enzyme function to a genuinely different one *is* feasible. Even if compelling examples are eventually found, the general

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[109] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 386.
[110] Charles Thaxton, "A New Design Argument," *Discovery Institute*, 1 September 1994, https://www.discovery.org/a/137/ : accessed 29 October 2025.
[111] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 57.
[112] Douglas Axe, "Darwin's Little Engine That Couldn't," in Ann Gauger, Douglas Axe, and Casey Luskin, *Science and Human Origins* (Seattle: Discovery Institute Press, 2012), 32–33.
[113] Ann Gauger, "On Enzymes and Teleology," *Science and Culture Today*, 19 July 2012, https://scienceandculture.com/2012/07/on_enzymes_and/ : accessed 29 October 2025.
[114] Douglas Axe, "Darwin's Little Engine That Couldn't," in Ann Gauger, Douglas Axe, and Casey Luskin, *Science and Human Origins* (Seattle: Discovery Institute Press, 2012), 34.

difficulty of functional transitions is now well established."[115]

"It will be helpful to summarize our result in the form of a principle as follows: **Darwinian transitions from *A* to *B* that accomplish invention cannot be presumed plausible simply because *A* and *B* are substantially similar.**"[116]

Gauger: "Our results indicated that a minimum of seven mutations would be required to convert or reconfigure one enzyme toward the other's function."[117]

Luskin: "This presents a serious problem for Darwinian evolution since a 2010 paper by Axe found that a feature that would require more than two maladaptive mutations, or more than six neutral mutations, before providing an advantage could not arise in the entire history of the earth."[118]

5.2.6 Boundaries of Variation in Breeding and Natural Populations

Joshua: What about the amazing changes animal breeders are able to produce by human selection?

Johnson: "Critics of evolutionary theory are well aware of the standard examples of microevolution, including dog breeding and the cyclical variations that have been seen in things like finch beaks and moth populations. The difference is that we interpret these observations as examples of the capacity of dogs and finches to vary within limits, not of a process capable of creating dogs and finches, much less the main groups of plants and animals, in the first place."[119]

Wells: "Darwin didn't write a book titled *How Existing Species Change Over Time*. He wrote a book titled *The Origin of Species*. His argument was that natural selection produces entirely new species, organs, and body plans. A temporary shift in the proportions of light- and dark-colored peppered moths is irrelevant to that argument."[120]

G. Kemper, H. Kemper, & Luskin: "Galápagos finches only provide an example of oscillating selection, with no net evolutionary change."[121]

Wells: "Selection oscillates with climatic fluctuations, and does not exhibit long- term evolutionary

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[115] Douglas Axe, "More on Objections to *Darwin's Doubt* from University of Texas Biologist Martin Poenie," *Science and Culture Today*, 15 July 2013, https://scienceandculture.com/2013/07/more_on_objecti_1/ : accessed 29 October 2025.
[116] Douglas Axe, "Darwin's Little Engine That Couldn't," in Ann Gauger, Douglas Axe, and Casey Luskin, *Science and Human Origins* (Seattle: Discovery Institute Press, 2012), 35.
[117] Ann Gauger, "On Enzymes and Teleology," *Science and Culture Today*, 19 July 2012, https://scienceandculture.com/2012/07/on_enzymes_and/ : accessed 29 October 2025.
[118] Casey Luskin, "Biologic Institute's Groundbreaking Peer-Reviewed Science Has Now Demonstrated the Implausibility of Evolving New Proteins," *Science and Culture Today*, 22 January 2015, https://scienceandculture.com/2015/01/biologic_instit_1/ : accessed 29 October 2025.
[119] Phillip E. Johnson, *Reason in the Balance: The Case Against Naturalism in Science, Law & Education* (Downers Grove, IL: InterVarsity Press, 1995), 74.
[120] Jonathan Wells, "Peppered Moths, an Evolutionary Icon, Are Back," *Science and Culture Today*, 3 June 2016, https://scienceandculture.com/2016/06/peppered_moths/ : accessed 22 December 2025.
[121] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 160.

change."[122]

"None of the evidence from the Galápagos finches gives us any reason to believe that natural selection can accomplish more than artificial selection—and the latter has never been observed to produce a new species."[123]

Junker & Scherer: "Plant and animal breeding provide direct evidence of enormous variability among species; however, this is limited to the microevolutionary realm and does not provide a starting point for further developments."[124]

Lönnig: "The interpretation of transformation as well as the concept of the 'evolutionary species' is often nothing but the misunderstanding of the 'enormous extent' of the genetic potential."[125]

Behe: "Not only are random mutation and natural selection grossly inadequate to *build* complex structures; they strongly tend to *break* them."[126]

"Darwinian processes consume genetic information as fodder; they don't produce it."[127]

"Darwin argued that artificial selection—such as has produced various dog breeds—was an analogy for natural selection. He was more right than he knew: they both work predominantly by degrading genes."[128]

Sewell: "Wolf-Ekkehard Lönnig carefully investigates and painstakingly documents the vast amount of genetic data obtained up to now on the origin of the domestic dog and its relevance for its enormous variation."[129]

Lönnig: "The differences between dog breeds are undoubtedly huge – and so is the fallacy that many

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[122] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 173.
[123] Jonathan Wells, "Misrepresenting the Gálapagos Finches," *Explore Evolution*, February 23, 2009, https://exploreevolution.com/2009/02/23/misrepresenting_the_galapagos_1/ : accessed 7 November 2025.
[124] Reinhard Junker and Siegfried Scherer, "Die Reichweite der Evolutionsfaktoren," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 69. Quoted passage translated from German.
[125] Wolf-Ekkehard Lönnig, "Die Frage nach der Anwendung des Biospezieskonzepts in der paläontologischen Praxis," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesIV5.Biospec.html : accessed 3 November 2025. Quoted passage translated from German.
[126] Michael J. Behe, *Darwin Devolves: The New Science About DNA That Challenges Evolution*, Kindle edition (HarperOne, 2024), 256. Page number reflects the Kindle edition mapped to ISBN 0062842617 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "only are random"; for print readers, the page number provides approximate placement.
[127] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 508. Page numbers reflect the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "fact that the large"; for print readers, the page range provides approximate placement.
[128] Michael J. Behe, *Darwin Devolves: The New Science About DNA That Challenges Evolution*, Kindle edition (HarperOne, 2024), 196. Page number reflects the Kindle edition mapped to ISBN 0062842617 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "that artificial"; for print readers, the page number provides approximate placement.
[129] Granville Sewell, quoted in Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 405; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025.

evolutionary theorists draw from them."[130]

"On closer analysis, the emergence of the diversity of forms in the domestic dog speaks rather for structural and/or functional degradation (usually degeneration)."[131]

"The *tremendous evolutionary potential* is **in reality a *tremendous potential for degeneration, losses of functions, lowering of integration*** in . . . the domestic dog."[132]

"The emergence of the dog breeds from the gray wolf . . . is not an argument for macroevolution, but . . . rather a **prime example of a form of typolysis.**"[133]

"***One must not confuse the dismantling of information, structures and functions and/ or the loss of level of integration with their mode of origin and thus try to justify macroevolution***."[134]

"This is roughly comparable to trying to deduce the mode in which they were created from the numerous changes caused by traffic accidents to automobiles that are still reasonably roadworthy."[135]

Meyer, Nelson, Moneymaker, Minnich, & Seelke: "Newfoundlands and Great Danes are both bred for large size. They now have bodies too large for their hearts and can suddenly drop dead from cardiac arrest. Many Great Danes develop bone cancer, as well. Breeders have tried to maximize the sloping appearance of a German Shepherd's hind legs. As a result, many German Shepherds develop hip dysplasia, a crippling condition that makes it hard for them to walk."[136]

Behe: "Many studies have shown that the genetic changes leading to the traits of various dog breeds—curly coat, shortened muzzles and legs, and more—are largely degradative. That is, the mutations

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[130] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 10; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[131] Wolf-Ekkehard Lönnig, Preface to *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 2; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[132] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 119; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[133] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 370; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[134] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 110; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[135] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 373; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[136] Stephen C. Meyer, Paul A. Nelson, Jonathan Moneymaker, Scott Minnich, and Ralph Seelke, *Explore Evolution: The Arguments for and Against Neo-Darwinism*, 1st UK ed. (Melbourne and London: Hill House Publishers, 2009), 91.

mostly break or blunt pre-existing genes."[137]

Lönnig: "*The prediction that not a single completely new functional DNA sequence (new gene) has been generated in the context of dog breed formation through the directionless mutations known to us might well not be too bold*."[138]

Laufmann & Glicksman: "Degradation can only change functions or features that exist. It cannot build fundamentally novel forms, systems, or even subsystems."[139]

Lönnig: "The ***origin*** of completely new functional structures and systems, which are necessary to build up the complexity of organisms, can hardly be explained by the ***failure*** of important structures."[140]

"Explaining the structure of life forms with the dismantling of structures is not particularly convincing in the long run."[141]

"Losses of function cannot be a *keystone* for *molecular innovations*."[142]

Eberlin: "Darwinism needs to explain the evolution of new systems, new engineering marvels, not the devolution of existing ones."[143]

Leisola: "I – as a medical geneticist – must confess that I find it incredible that anyone would appeal to changes which . . . are almost all 'degenerate,' caused by loss of function recessive mutations as well as some gene duplications (both of which cause disease and major abnormalities in man as well as dogs) as examples of mutations which might change 'a fish into a man.' I find the claim beyond the

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[137] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 393. Page number reflects the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "many studies"; for print readers, the page number provides approximate placement.

[138] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 10; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[139] Steve Laufmann and Howard Glicksman, *Your Designed Body* (Seattle: Discovery Institute Press, 2022), 391–392.

[140] Wolf-Ekkehard Lönnig, "F2-Zusammenbruch, Hybridensterilität und Hybridensterblichkeit und -schwäche (Punkte 4,2 und 1, p. 68): (1) F2-Zusammenbruch," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesIV2.B.1.html : accessed 3 November 2025. Quoted passage translated from German.

[141] Wolf-Ekkehard Lönnig, "C. Industriemelanismus," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesV1.1.Indi.html : accessed 3 November 2025. Quoted passage translated from German.

[142] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 68; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[143] Marcos Eberlin, *Foresight: How the Chemistry of Life Reveals Planning and Purpose*, Kindle edition (Seattle: Discovery Institute Press, 2019), 98. Page number reflects the Kindle edition mapped to ISBN 1936599651 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "Darwinism needs"; for print readers, the page number provides approximate placement.

ridiculous."[144]

Lönnig: "In comparison to the wolf, ***functional integration is lowered on the genetic and organismal levels*** resulting in the plethora of the overall functionally *less complex phenotypes and genotypes* of the some 400 dog breeds."[145]

Joshua: So, are dog breeds like the Pekinese, Bulldog, Chihuahua, and Saint Bernard all considered part of the same species?

Lönnig: "All well-informed biologists today agree that these are **objectively** dog breeds of the same genus, species and subspecies *Canis lupus familiaris*. One will not even want to classify the mentioned breeds as their own subspecies (for example as *Canis lupus pekingensis*, etc.), but combines all forms together into the common subspecies *familiaris*."[146]

"Through artificial insemination . . . St. Bernards should. . . be crossable with Pekingese."[147]

Davis & Kenyon: "A Chihuahua may not breed with a Great Dane because of the sheer size, yet it will breed with other dogs closer to its size. These dogs in turn will breed with other dogs slightly larger in size, until finally we reach the Great Dane. In other words, though the two extremes cannot interbreed, there are intermediate breeds connecting them. Therefore all dogs have long been considered a single species."[148]

Lönnig: "[Masatoshi] Nei [writes]: 'With domestic animals one normally refrains from establishing new systematic species and genera, – in nature, however, one creates numerous morphospecies and morphogenera, regardless of the genetic situation, which are often used uncritically as evidence of evolution.'"[149]

Meyer, Nelson, Moneymaker, Minnich, & Seelke: "[Peter and Rosemary Grant] noticed that several separate species of finches were interbreeding."[150]

Wells: "Their success at hybridizing . . . raises a question about whether they are separate species at

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[144] Matti Leisola, quoted in Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 406; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025.

[145] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 88–89; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[146] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 44–45; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[147] Wolf-Ekkehard Lönnig, "Tauben – Enten – Hunde," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesIITaEnHu.html : accessed 3 November 2025. Quoted passage translated from German.

[148] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 16.

[149] Wolf-Ekkehard Lönnig, "Darwin's Finches: Galápagos Islands as an Evolutionary Model," *Science and Culture Today*, 30 November 2020, https://scienceandculture.com/2020/11/darwins-finches-galapagos-islands-as-an-evolutionary-model/ : accessed 29 October 2025.

[150] Stephen C. Meyer, Paul A. Nelson, Jonathan Moneymaker, Scott Minnich, and Ralph Seelke, *Explore Evolution: The Arguments for and Against Neo-Darwinism*, 1st UK ed. (Melbourne and London: Hill House Publishers, 2009), 93.

all."[151]

Junker & Scherer: "If one were to use the same approach to classifying dog breeds as for Darwin's finches, one would logically have to speak of the existence of many species there as well."[152]

Lönnig: "With dogs . . . one could set up a new family with several genera and over 400 'species', something similar with the many races of pigeons, or of chickens, or horses etc."[153]

Dembski & Wells: "What breeders accomplish is diversification within a given species, a limited form of change known as *microevolution*."[154]

Junker & Scherer: "The emergence of various dog breeds from a single ancestral form, probably the wolf, falls under microevolution, while the emergence of mammals from reptiles and more simply organized creatures would be macroevolution. In the first case, existing structures are modified (fur characteristics, muzzle shape, etc.), while in the second, entirely new structures would have to be formed: hair, mammary glands, mechanisms for temperature regulation, and everything else that characterizes mammals but not reptiles or other presumed ancestors."[155]

Sermonti: "Left to themselves, domesticated breeds would either die out or revert to the wild state—scarcely a commendable model for nature's progress."[156]

Rammerstorfer: "A breeder focuses on one or a few hereditary traits of an organism and promotes them specifically over many generations—even if the resulting form would most likely perish outside of a protected environment."[157]

Lönnig: "*Most dog breeds are a selective impossibility in the wild*."[158]

Meyer, Nelson, Moneymaker, Minnich, & Seelke: "When breeders try to force a species beyond its limits, they often create more defects than desirable traits. These defects impose limits on the amount

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[151] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 172.

[152] Reinhard Junker and Siegfried Scherer, "Variation, Mikroevolution und Makroevolution," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 45. Quoted passage translated from German.

[153] Wolf-Ekkehard Lönnig, *Are Darwin's Finches "a particularly compelling example of speciation" as well as "evolution in action" or what else? A brief note on the question whether macroevolution is happening on the Galápagos Islands* (self-published, 23 September 2020; with supplement, 14 and 15 October 2020), 12; digital file, https://www.weloennig.de/NASGalapagos.pdf : accessed 9 November 2025.

[154] William A. Dembski and Jonathan Wells, *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), 32.

[155] Reinhard Junker and Siegfried Scherer, "Variation, Mikroevolution und Makroevolution," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 44, text accompanying fig. 4.8. Quoted passage translated from German.

[156] Giuseppe Sermonti, *Why Is a Fly Not a Horse?* (Seattle: Discovery Institute Press, Center for Science and Culture, 2005), 50.

[157] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 59, quoted from boxed section. Quoted passage translated from German.

[158] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 48; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

of change that breeders can ultimately produce."[159]

Lönnig: If this plasticity of pet shapes also maybe sometimes seems limitless, why is it that we still have no difficulty recognizing even the most bizarre breed of dog as a dog, the most unusual breed of cat as a cat, the most unusual breed of cattle as a cow, etc. . . . ?"[160]

Luskin: "Artificial selection is able to dramatically speed up the rate at which change takes place by deliberately selecting for certain traits. Thus, we can expect that what takes many thousands of years for natural selection to accomplish might be happen much faster by artificial selection.

". . . Given that natural speciation events are said to take place in as little as a few hundred generations, or about 5,000 years, and given that artificial selection only speeds up the process of change, it can be assumed that we should be able to witness dramatic biological change in [horses and dogs]."[161]

Meyer, Nelson, Moneymaker, Minnich, & Seelke: "Darwin's theory states that the unguided force of natural selection is supposed to be able to do what the intelligent breeder can do. But even a process of careful, intentional selection encounters limits that neither time nor the efforts of human breeders can overcome. Consequently, critics argue that by the logic of Darwin's own analogy, the power of natural selection is also limited."[162]

Luskin: "[The] argument is that intelligent breeding *should make it easier to foster evolutionary change, yet we still encounter limits to evolution.* Rather than disqualifying artificial selection from being an analogy for natural selection, artificial selection's reliance on intelligent breeders demonstrates that even in the best case for evolution, *there are still limits to how far populations can evolve.* . . .

". . . Artificial selection gives desirable traits a selective benefit of 1, and undesirable traits a selective of 0, on a scale from 1 to 0. Nature is far less choosy; selective benefits are usually much less than 1 or even 0.1. In many circumstances, it's difficult even for beneficial traits to become fixed into a population. In sum, the 'population genetics of artificial selection' are more favorable to biological evolution than are the rules of population genetics governing blind and unguided natural selection in the wild."[163]

Junker and Scherer: "*Continued artificial selection leads to homozygosity and thus to a reduction in variability*. One can therefore speak of a 'dead-end development.' . . . Because the breeder eliminates all variants and mutants that are detrimental to his goals, the gene pool of bred breeds becomes

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[159] Stephen C. Meyer, Paul A. Nelson, Jonathan Moneymaker, Scott Minnich, and Ralph Seelke, *Explore Evolution: The Arguments for and Against Neo-Darwinism*, 1st UK ed. (Melbourne and London: Hill House Publishers, 2009), 91.

[160] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 250; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[161] Casey Luskin, "Response to the NCSE's Reply to *Explore Evolution* on Natural Selection," *Explore Evolution*, 2 March 2010, https://exploreevolution.com/2010/03/02/response_to_the_ncses_reply_to/ : 7 November 2025.

[162] Stephen C. Meyer, Paul A. Nelson, Jonathan Moneymaker, Scott Minnich, and Ralph Seelke, *Explore Evolution: The Arguments for and Against Neo-Darwinism*, 1st UK ed. (Melbourne and London: Hill House Publishers, 2009), 91.

[163] Casey Luskin, "Response to the NCSE's Reply to *Explore Evolution* on Natural Selection," *Explore Evolution*, 2 March 2010, https://exploreevolution.com/2010/03/02/response_to_the_ncses_reply_to/ : 7 November 2025.

impoverished; many alleles of the wild forms are lost. Only a portion of the genetic diversity of a population is used. However, the smaller and more uniform the gene pool of a population, the smaller the selection and thus the development possibilities. Thus, populations find themselves in genetic dead ends from which, without the preserving hand of humans, they would either be doomed to extinction or from which they must, so to speak, 'rescue' themselves by crossing with wild forms (introducing alleles of the wild forms)."[164]

5.2.7 The Law of Recurrent Variation

Lönnig: "Let's have a look at the question of whether mutations could have provided the raw materials for natural selection for the origin of all species and life forms of the earth. Having investigated the question for about 35 years now including the work with collections of mutants of two model plant species (the pea and the snapdragon – more than 1 million plants), I have come to a conclusion strongly differing from the modern synthesis concerning the potential of mutagenesis. The results I have summed up in 'the law of recurrent variation.' . . . This law specifies that, for any case thoroughly examined (from pea to man), mutants occur in a large, but nevertheless limited spectrum of phenotypes which – in accordance with all the experiences of mutation research of the 20th century taken together – cannot transform the original species into an entirely new one. . . .

"To understand these observations one must clearly distinguish between two levels: first, the level of the phenotypes, and second, the DNA level. On the latter, the potential of missense and nonsense mutations and other sequence deviations is nearly infinite. However, the spectrum of the resulting different phenotypes is not, because the space of functionally valid sequences within a given system of tightly matching regulatory and target genes and correspondingly co-ordinated functions involved in the formation of the finely balanced whole of an organism, cannot infinitely be stretched by chance mutations."[165]

Meis: "The spectrum of non-lethal mutations becomes predictable over time."[166]

Lönnig: "Both, in the animal and plant kingdoms, selection limits have been detected, which could not be overcome in spite of persistently intensified mutagenesis. The basic reason is that the spectrum of mutant phenotypes is large but nevertheless limited. . . .

"Given similar genetical preconditions, the spontaneous mutation process in the wild will produce the same large but limited spectra of mutants, which have appeared in mutagenesis experiments. Yet, due to the decidedly lower mutation rate under natural conditions, much larger populations are needed to realize that potential – apart from the fact that most of the mutants will disappear shortly after

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[164] Reinhard Junker and Siegfried Scherer, "Die Reichweite der Evolutionsfaktoren," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 68–69. Quoted passage translated from German.

[165] Wolf-Ekkehard Lönnig, *On the Limits of Natural Selection: The Original Article and all Relevant Posts as well as the Link to the Supplementary Podcast now in One Document* (Cologne, 31 July/4 August 2016; includes reprint of "Natural Selection" from *The Corsini Encyclopedia of Psychology and Behavioral Science*, vol. 3 [2001], 1008–1016), 6; digital file, https://www.weloennig.de/jfterrorchipmunks.pdf : accessed 7 November 2025.

[166] Karl-Friedrich Meis, "Was ist Intelligent Design?" *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, https://www.intelligentdesigner.de/was-ist-intelligent-design/ : accessed 7 November 2025. Quoted passage translated from German.

their arrival because of their negative selection values."[167]

"The law of recurrent variation implies that genetically properly defined species have real boundaries that cannot be abolished or transgressed by accidental mutations."[168]

Behe: "The fact that the large majority of even beneficial mutations either degrade genes or outright break them indicates that, while Darwin's mechanism does permit species to adapt to particular environments, that adaptation results in ever-decreasing flexibility, making evolution self-limiting."[169]

5.2.8 Mutation Breeding

Lönnig: "The limits of potential change are already shown very clearly by the results of mutation research."[170]

"Provided that mutations had, in fact, produced the raw materials for the origin of all genes and proteins, all physiological processes and anatomical structures of both the animal and plant kingdoms alike, the most surprising successes had to be expected by applying these factors – induced mutations and selection – to animal and plant breeding research."[171]

"According to the premises of the synthetic theory, explaining the origin of the entire world of organisms predominantly by selected mutations, a worldwide revolution in plant breeding research had been expected in the late 1930s, which was reinforced by Nobel laureate Josef H. Muller in 1946 especially for first decades after the Second World War.

"However, due to the fact that:

(a) 'many programmes failed...to produce anything useful',
(b) 'almost all mutants distinguish themselves by negative selection values',
(c) 'all kinds of mutations are even more frequently lethal and more strongly diminishing vitality and

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[167] Wolf-Ekkehard Lönnig, "Mutation Breeding, Evolution, and the Law of Recurrent Variation," *Recent Research Developments in Genetics & Breeding* 2 (Trivandrum, India: Research Signpost, 2005), 59 [PDF p. 15]; PDF reprint, slightly corrected 1 December 2007, https://www.weloennig.de/Loennig-Long-Version-of-Law-of-Recurrent-Variation.pdf : accessed 9 November 2025.

[168] Wolf-Ekkehard Lönnig, "Mutation Breeding, Evolution, and the Law of Recurrent Variation," *Recent Research Developments in Genetics & Breeding* 2 (Trivandrum, India: Research Signpost, 2005), 64 [PDF p. 20]; PDF reprint, slightly corrected 1 December 2007, https://www.weloennig.de/Loennig-Long-Version-of-Law-of-Recurrent-Variation.pdf : accessed 9 November 2025.

[169] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 507–508. Page numbers reflect the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "fact that the large"; for print readers, the page range provides approximate placement.

[170] Wolf-Ekkehard Lönnig, *Ursprung und Entwicklung des Pflanzenreichs im Spiegel älterer und moderner Auffassungen: Kritische Betrachtung unter Auswahl geeigneter Beispiele* (MSc thesis, University of Berlin, 1971), 106 (PDF pagination); digital file, https://www.weloennig.de/Staatsexamensarbeit.pdf : accessed 6 December 2025. Quoted passage translated from German. The PDF version consulted includes addenda not present in the original thesis.

[171] Wolf-Ekkehard Lönnig, "Mutation Breeding, Evolution, and the Law of Recurrent Variation," *Recent Research Developments in Genetics & Breeding*, vol. 2 (Trivandrum, India: Research Signpost, 2005), 48 [PDF p. 4]; PDF reprint, slightly corrected 1 December 2007, https://www.weloennig.de/Loennig-Long-Version-of-Law-of-Recurrent-Variation.pdf : accessed 9 November 2025.

fertility in animals',
(d) the overall results 'have been rather meager in relation to the efforts expended',
(e) 'in spite of an enormous financial expenditure... [mutation breeding] widely proved to be a failure',
(f) 'the objective of practical plant breeding...could not be realized' neither by 'macro-mutations' nor by 'micro-mutations',
(g) none of the modifying measures applied could help fulfilling 'the ultimate hope of obtaining more of the "better" mutants',

"- the overall result was *that these strong anticipations concerning a revolution in plant breeding, accompanied by an intense euphoria especially among geneticists and agronomical scientists after the Second World War, ended up in a worldwide failure and breakdown of mutation breeding as an autonomous branch of breeding research in the 1980s at the latest in most Western countries.*

"The status of mutation breeding today is that of 'an occasionally used supplement to traditional methods', just 'occasionally useful in enlarging the genetic base of a programme in a limited and highly specific fashion'."[172]

"As far as I am aware, no research foundation on earth promotes and subsidizes pure mutation breeding anymore and anywhere."[173]

"Why has mutation breeding collapsed almost worldwide, if (random) mutations are supposed to be as innovative as the Synthetic Theory of Evolution claims . . . ?"[174]

"***The creation of entirely new functional DNA sequences constituting new genes and new gene reaction chains for novel synorganized anatomical structures and/ or physiological functions has never been achieved by induced random mutations in plants or animals***."[175]

5.2.9 Mutational Degradation and the Direction of Natural Processes

Sermonti: From the molecular standpoint, i.e. variations in the DNA text, mutation is a degenerative phenomenon, a copying error, a product of entropy in the genetic endowment."[176]

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[172] Wolf-Ekkehard Lönnig, "Mutation Breeding, Evolution, and the Law of Recurrent Variation," *Recent Research Developments in Genetics & Breeding*, vol. 2 (Trivandrum, India: Research Signpost, 2005), 51, 52 [PDF pp. 7, 8]; PDF reprint, slightly corrected 1 December 2007, https://www.weloennig.de/Loennig-Long-Version-of-Law-of-Recurrent-Variation.pdf : accessed 9 November 2025.
[173] Wolf-Ekkehard Lönnig, *The Evolution of Man: What Do We Really Know? Testing the Theories of Gradualism, Saltationism and Intelligent Design* (self-published, 18/19 July and 21 August 2019; with supplement, 9 and 19 September 2019), 12; digital file, https://www.weloennig.de/HumanEvolution.pdf : accessed 9 November 2025.
[174] Wolf-Ekkehard Lönnig, *Die Evolution der karnivoren Pflanzen: Was die Selektion nicht leisten kann – das Beispiel Utricularia (Wasserschlauch)*, 3rd improved edition (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2012), 95 [PDF p. 109]; digital file, https://www.weloennig.de/Utricularia2011Buch.pdf : accessed 9 December 2025. Quoted passage translated from German.
[175] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 118n207; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.
[176] Giuseppe Sermonti, *Why Is a Fly Not a Horse?* (Seattle: Discovery Institute Press, Center for Science and Culture, 2005), 14.

Sewell: "While every other natural process tends to turn order into disorder, Darwinists have always believed that natural selection is the one unintelligent process in the universe that *can* create spectacular order out of disorder."[177]

"The idea that what has happened on Earth seems to be contrary to the more general statements of the second law of thermodynamics is generally rebutted by noting that the Earth is an open system, and the second law only applies to isolated systems.

"Nevertheless, the second law is all about probability and there is something about the origin and evolution of life, and the development of human intelligence and civilization, that appears to many to defy the *spirit*, if not the letter, of the second law even if the Earth is an open system."[178]

"My primary contribution to the ID debate has been to show how silly and unscientific this 'compensation' counterargument is, that the very equations of entropy change on which this counterargument is based actually support, on closer examination, the common sense conclusion that 'if an increase in order is extremely improbable when a system is isolated, it is still extremely improbable when the system is open, unless something is entering that makes it *not* extremely improbable.'"[179]

Sanford: "Genes contain information just like an instruction manual, and . . . mutations are random typographical errors within those instructions."[180]

Davis & Kenyon: "Typing errors rarely improve the quality of a written message; if too many occur, they may even destroy the information contained in it. Likewise, mutations rarely improve the quality of the DNA message, and too many may even be lethal to the organism."[181]

Lönnig: "Highly efficient ('genius') DNA repair mechanisms . . . correct most replication errors."[182]

Joshua: Fred Hoyle argued: "The Darwinian theory is wrong because random variations tend to worsen performance, as indeed commonsense suggests they must do."[183] He wrote: "It is commonsense that a mistake in copying any highly complicated system is unlikely to improve the way it works. Errors are much more likely to be harmful than beneficial."[184]

Sanford: "Despite massive amounts of mental conditioning of the public by the intellectual elite, I believe most people can still instinctively see that the relentless accumulation of random misspellings

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[177] Granville Sewell, "Vindicated by Behe: Devolution Is Natural, Evolution Is Not," *Science and Culture Today*, 1 April 2019, https://scienceandculture.com/2019/04/vindicated-by-behe-devolution-is-natural-evolution-is-not/ : accessed 29 October 2025.

[178] Granville Sewell, "Life and the Underlying Principle Behind the Second Law of Thermodynamics," *Science and Culture Today*, 1 March 2024, https://scienceandculture.com/2024/03/life-and-the-underlying-principle-behind-the-second-law-of-thermodynamics/ : accessed 29 October 2025.

[179] Granville Sewell, "It's Really Not Rocket Science," *Science and Culture Today*, 16 November 2015, https://scienceandculture.com/2015/11/it_really_isnt/ : accessed 29 October 2025.

[180] J.C. Sanford, *Genetic Entropy*, 4th edition (FMS Publications, 2014), 183.

[181] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 12.

[182] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 227; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[183] Fred Hoyle, *The Intelligent Universe*, 1st American ed. (New York: Holt, Rinehart and Winston, 1984), 48.

[184] Fred Hoyle, *The Intelligent Universe*, 1st American ed. (New York: Holt, Rinehart and Winston, 1984), 36.

within assembly manuals cannot transform a car into a spaceship."[185]

5.2.10 Developmental and Informational Constraints on Evolution

G. Kemper, H. Kemper, & Luskin: "Many have hitched their hopes to a field called **evolutionary developmental biology** (often called '**evo-devo'**), which claims that evolution proceeds by mutations in genes controlling the development of an organism."[186]

Meyer: "Mutations in genes that are expressed late in the development of an organism will not affect the body plan. Mutations expressed early in development, however, could conceivably produce significant morphological change. . . . Thus, events expressed early in the development of organisms have the only realistic chance of producing large-scale macroevolutionary change. . . .

"Yet recent studies in developmental biology make clear that mutations expressed early in development typically have deleterious effects."[187]

G. Kemper, H. Kemper, & Luskin: "Those who seek to explain how large changes in an organism evolve by genetic evolution are faced with a problem: major mutations are not viable, but viable mutation are not major."[188]

Meyer, Nelson, Moneymaker, Minnich, & Seelke: "The kind of mutation that natural selection requires—namely, large-scale, beneficial mutation—does *not* occur."[189]

Lönnig: "It should . . . be clear that every organism is a balanced system, with all its parts coordinated with one another. A random alteration of even a single component, be it the genetic information for a chemical process or many components, or the loss of parts or entire organs, necessarily leads to the disintegration of that component—relative to all other components integrated into the organism in question. Mutations are thus, in principle, a loss of the level of integration, the richness, and complexity of the structures that interact to form an organism."[190]

Durston: "An essential, falsifiable prediction of Darwinian theory . . . is that *functional information must, on average, increase over time*.

"Interestingly, a prediction of intelligent design science is quite the opposite. Since information always degrades over time for any storage media and replication system, intelligent design science postulates

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[185] J.C. Sanford, *Genetic Entropy*, 4th edition (FMS Publications, 2014), 156.
[186] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 168.
[187] Stephen C. Meyer, "The Origin of Biological Information and the Higher Taxonomic Categories," *Proceedings of the Biological Society of Washington* 117, no. 2 (2004), 222. Reprinted without pagination or footnotes at *Discovery Institute*, https://www.discovery.org/a/2177 : accessed 9 November 2025.
[188] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 169.
[189] Stephen C. Meyer, Paul A. Nelson, Jonathan Moneymaker, Scott Minnich, and Ralph Seelke, *Explore Evolution: The Arguments for and Against Neo-Darwinism*, 1st UK ed. (Melbourne and London: Hill House Publishers, 2009), 106.
[190] Wolf-Ekkehard Lönnig, *Ursprung und Entwicklung des Pflanzenreichs im Spiegel älterer und moderner Auffassungen: Kritische Betrachtung unter Auswahl geeigneter Beispiele* (MSc thesis, University of Berlin, 1971), 17 (PDF pagination); digital file, https://www.weloennig.de/Staatsexamensarbeit.pdf : accessed 6 December 2025. Quoted passage translated from German. The PDF version consulted includes addenda not present in the original thesis.

that the digital information of life was initially downloaded into the genomes of life. It predicts that, *on average, genetic information is steadily being corrupted by natural processes*. The beauty of these two mutually incompatible predictions in science is that the falsification of one entails verification of the other. . . .

". . . Mutations produce random changes in the digital information of life. It is generally agreed that the rate of deleterious mutations is much greater than the rate of beneficial mutations. My own work with 35 protein families suggests that the rate of destruction is, at minimum, 8 times the rate of neutral or beneficial mutations.

"Simply put, the digital information of life is being destroyed much faster than it can be repaired or improved."[191]

Meyer: "The discovery of dual and overlapping messages in genetic texts—messages essential to function—only complicates the information problem for scenarios that rely on chance and/or natural selection. Indeed, a trial-and-error process seems unlikely to produce nested coding of information, since the probability of error increases with each trial when two or more sets of functional constraints have to be satisfied. And many functional outcomes in the cell depend upon satisfying multiple sets of constraints."[192]

Luskin: "The code, with its multi-layered complexity, bears the signature of an intelligent coder."[193]

Meyer: "The use of such encryption techniques are, based upon our experience, the sole province of intelligent agents. We know of no other such cause of this effect."[194]

5.2.11 Empirical Limits: Experimental Evidence and Specialization

Behe: "To have a good idea of what Darwinian evolution can do, we no longer need to rely solely on speculative models, which may overlook or misjudge aspects of biology that nature would encounter. We already have good data in hand. We already have results that should constrain models. Over many thousands of generations, astronomical numbers of malarial cells seem not to have been able to take advantage of the look-ahead effect or anything else to build new, coherent molecular machinery. All that's been seen in that system in response to antibiotics are a few point mutations. In tens of thousands of generations, with a cumulative population size in the trillions, no coherent new systems have been seen in the fascinating work of Richard Lenski on the laboratory evolution of *E. coli*. Instead, even beneficial mutations have turned out to be degradative ones, where previously functioning genes are deleted or made less effective. And that's the same result as has been seen in the human genome in response to selective pressure due to malaria—a number of degraded genes or regulatory elements, and no new machinery.

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[191] Kirk Durston, "An Essential Prediction of Darwinian Theory Is Falsified by Information Degradation," *Science and Culture Today*, 9 July 2015, https://scienceandculture.com/2015/07/an_essential_pr/ : accessed 29 October 2025.
[192] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 466–467.
[193] Casey Luskin, "Junk DNA and Science-Stopping," *Science and Culture Today*, 1 December 2006, https://scienceandculture.com/2006/12/junk_dna_and_sciencestopping/ : accessed 29 October 2025.
[194] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 467.

"Theoretical models must be constrained by data. If models don't reproduce what we do know happens in adaptive molecular evolution, then they are wholly unreliable in telling us anything about what we don't know. Unless a model can also reproduce empirical results such as those cited just above, it should be regarded as fanciful."[195]

Anderson: "The real take-home lesson is that evolution, on its best day, is an embarrassingly anemic process. In the face of real-world data, it's evident that no matter what ideas we throw at the wall to try to help the story along, we still need massive numbers of organisms with rapid reproductive cycles to achieve even modest results by evolutionary means. We can argue about whether 'effective' chloroquine resistance should be defined as requiring exactly four mutations. We can quibble about whether the mutations are beneficial or neutral. We can debate the math and even be off by an order of magnitude or more. Yet none of this alleviates the significant challenge the real-world data poses to the evolutionary story."[196]

Behe: "The first major barrier is random mutation itself. Because genomes code for many sophisticated molecular systems, random changes that have an effect will most frequently break or damage some already-functioning system. Nonetheless, breaking or diminishing subsystems of an exceedingly complex entity such as the cell can sometimes be adaptive. . . .

"The second roadblock is actually natural selection. As Darwin envisioned, natural selection works relentlessly, honing a selected trait to fit its job more more closely. The problem is that, the more selection hones a trait, the more specialized it becomes, and the more difficult then to use it for another complex purpose without prohibitively unlikely mutational modification."[197]

Lönnig: "The fact that most specialized forms have lost their original adaptability (in the sense of degeneration theory) is a biological fact that has been confirmed in many ways, which we find particularly impressively confirmed in island populations."[198]

"Selection only plays a role insofar as it guarantees the functional preservation of the part of the genetic potential that is absolutely necessary at a location."[199]

Meis: "Specializing a universal software leads to a loss of functionality. The light version of a software, for example, can be obtained by omitting functions from the Pro version. As a rule, the most

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[195] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 257–258. Page numbers reflect the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "have a good"; for print readers, the page range provides approximate placement.

[196] Eric H. Anderson, "Real-World Data and the Lesson of Chloroquine Resistance," *Science and Culture Today*, 28 February 2022, https://scienceandculture.com/2022/02/real-world-data-and-the-lesson-of-chloroquine-resistance/ : accessed 29 October 2025.

[197] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 330. Page number reflects the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "first major"; for print readers, the page number provides approximate placement.

[198] Wolf-Ekkehard Lönnig, "Evolutionäre Kontinuität und Diskontinuität," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesV3.Konti.html : accessed 2 November 2025. Quoted passage translated from German.

[199] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 351n715; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German. The subsequent footnote on this page is numbered as 619 in the original.

comprehensive version is developed first. Based on this, several specialized (slimmed-down) versions (e.g. Home Edition) can be launched on the market. Analogously, deliberate breeding of biological systems for the purpose of specialization leads to gene pool impoverishment. An increase in software complexity always requires an (intelligent) software developer. Gene pool enrichment would be a creative act of the highest ingenuity."[200]

5.2.12 Orphan Genes and Higher-Level Biological Information

Meyer, Nelson, Moneymaker, Minnich, & Seelke: "[Molecular biologists] have been surprised to learn that a large number of genes are unique to the organism in which they are found. . . .

"According to evolutionary theory, new genes arise from old genes by mutation. This process should leave a trail of evidence behind—clues that would allow us to figure out the ancestry of the genes. New genes should resemble the older 'ancestor' genes."[201]

G. Kemper, H. Kemper, & Luskin: "Such orphan genes provide evidence *for* intelligent design because there is no plausible material source for their information."[202]

Meyer: "Neo-Darwinism has long sought to explain the origin of new information, form, and structure as a result of selection acting on randomly arising variation at a low level within the biological hierarchy, namely, within the genetic text. Yet major morphological innovations depend on a specificity of arrangement at a much higher level of the organizational hierarchy, a level that DNA alone does not determine. Yet if DNA is not wholly responsible for body-plan morphogenesis, then DNA sequences can mutate indefinitely, without regard to realistic probabilistic limits, and still not produce a new body plan, suggesting the possibility of something else at work in the origin of major morphological innovations."[203]

Lönnig: "Using experience as yardstick shows clearly that consciousness, intelligence and genius are absolutely necessary as the cause for the origin of the information for the design of the immensely complicated organic structures, which are so marvellously attuned to the highest precision."[204]

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[200] Karl Friederich Meis, "Kritikpunkt 5," *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, https://www.intelligentdesigner.de/kritikpunkt-5/ : accessed 26 August 2025. Quoted passage translated from German.

[201] Stephen C. Meyer, Paul A. Nelson, Jonathan Moneymaker, Scott Minnich, and Ralph Seelke, *Explore Evolution: The Arguments for and Against Neo-Darwinism*, 1st UK ed. (Melbourne and London: Hill House Publishers, 2009), 60.

[202] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 252n39.

[203] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 476.

[204] Wolf-Ekkehard Lönnig, "English Summary (Facts and Polemics)," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIEng.html : accessed 3 November 2025.

Section 6

6.1 Dialogue in *Reason in the Balance*:

> **Winnie:** "Let me give you an analogy, though it isn't Darwin's. Think of the odds of getting four aces when you're dealt four cards. Assuming no one is cheating, the odds are pretty astronomical. But suppose you just keep getting dealt four cards over and over, and when you get an ace you keep it; then you're dealt four more cards, and when you get a second ace, you keep that too. Obviously by this process, it would be inevitable that you'd eventually get four aces in a reasonable number of deals. Four aces on one deal is a "miracle." Four aces after many deals and "ace selection" is just what you'd expect. And that's how evolution proceeds, by small modifications, keeping the successful ones and getting rid of the unsuccessful."[205]

6.2 Extended Dialogue

6.2.1 Poker Hand Probabilities and Specification

Ewert & Dembski: "For dice or cards, we assume any roll is as likely as any other and any hand is as likely as any other. Because the probabilities are all the same, they are uniform or equiprobable."[206]

Dembski: "The probability of any poker hand is ½,598,960."[207]

Meyer: "Any hand of cards . . . will represent a highly improbable occurrence."[208]

Joshua: If any given hand is equiprobable and highly improbable (1/2,598,960), why are certain hands, like four of a kind or a royal flush, considered better than a pair according to the rules of the game?

Dembski: "There are 2,598,960 distinct poker hands. These constitute the relevant range of contingencies. One constraint would be hands with exactly one pair. These number 1,098,240. So, assuming all hands are equiprobable, the probability of getting exactly one pair is 1,098,240/2,598,960, or roughly 0.42. But consider instead a royal flush, of which there are only four. Assuming again equiprobability, the probability of getting a royal flush is 4/2,598,960, or very close to .00000154, a much smaller probability."[209]

"Suppose now that you are playing a game of poker and you come across these two hands, namely, a

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[205] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 310–311.
[206] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 427.
[207] William A. Dembski, "Specified Complexity Made Simple: The Marriage of Andrei Kolmogorov and Claude Shannon," 26 February 2024, *BillDembski.com*, https://billdembski.com/intelligent-design/specified-complexity-made-simple : accessed 9 November 2025.
[208] Stephen C. Meyer, "Evidence for Design in Physics and Biology," 26 September 2003, https://stephencmeyer.org/2003/09/26/evidence-for-design-in-physics-and-biology/ accessed 14 November 2025.
[209] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 438–439.

royal flush and a single pair. Which are you more apt to attribute to chance? Which are you more apt to attribute to cheating, and therefore to design? Clearly, a single pair would, by itself, not cause you to question chance. It is specified in virtue of its short description. But because it is highly probable, and therefore not complex, it would not count as an instance of specified complexity.

"Witnessing a royal flush, however, would elicit suspicion, if not an outright accusation of cheating (and therefore of design). Of course, given the sheer amount of poker played throughout the world, royal flushes will now and then appear by chance. But what raises suspicion that a given instance of a royal flush may not be the result of chance is its short description (a property it shares with 'single pair') combined with its complexity/improbability (a property it does not share with 'single pair')."[210]

Joshua: What does short description length have to do with specification?

Dembski & Ewert: "It's the improbable events captured with short descriptions that catch our attention and cause us to question whether they happened by chance."[211]

"We assume, as seems reasonable, that a generic agent is more likely to take actions that will result in an event with a short description. . . .

". . . The underlying intuition is that for events with short descriptions, an agent is much more likely to cause those events than would happen under random chance."[212]

[210] William A. Dembski, "Specified Complexity Made Simple: The Marriage of Andrei Kolmogorov and Claude Shannon," 26 February 2024, *BillDembski.com*, https://billdembski.com/intelligent-design/specified-complexity-made-simple : accessed 9 November 2025.
[211] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 265.
[212] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 290–291.

Section 7

7.1 Dialogue in *Reason in the Balance*:

> **Stephen:** OK [Winnie], I get the theory. Nice analogy, but why should I believe this is how it really happened?[213]

7.2 Extended Dialogue

7.2.1 Natural Selection as a Non-Teleological Process

Joshua: Before you answer Stephen's question, Winnie, I would like to point out a relevant dissimilarity between natural selection and your card analogy. In the card analogy, a mind is doing the selection, but Darwinian natural selection is non-teleological.

Rammerstorfer: "Evolution is a journey without a destination."[214]

Hedin: "Natural selection selects for present function and advantage, never for future function."[215]

Dembski: "This form of selection operates without goals, has neither plan nor purpose, and is wholly undirected. The great appeal of Darwin's selection mechanism was, after all, that it would eliminate teleology from biology. Yet by making selection an undirected process, Darwin drastically abridged the type of complexity biological systems could manifest. Henceforth biological systems could manifest only cumulative complexity, not irreducible complexity."[216]

7.2.2 Cumulative Complexity, Irreducible Complexity, and the Co-option Challenge

Marks II, Dembski & Ewert: Baby steps can work. Suppose we have 30 coins and we want them all, by chance, to show heads. . . . We throw all 30 coins up in the air. They come down, bounce noisily on the title floor and eventually all show either heads or tails. We announced a success if they all show up heads. On average we would need to repeat this experiment about 1 billion times before we achieved a success. This translates to about 30 billion total coin flips.

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[213] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 311.
[214] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 60. Quoted passage translated from German.
[215] Eric Hedin, *Canceled Science: What Some Atheists Don't Want You to See*, Kindle edition (Seattle: Discovery Institute Press, 2021), 186. Page number reflects the Kindle edition mapped to ISBN 1637120001 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "selection selects"; for print readers, the page number provides approximate placement.
[216] William Dembski, "Naturalism and design," in William Lane Craig and J. P. Moreland, eds., *Naturalism: A Critical Analysis* (London and New York: Routledge, 2000), 274.

"Now let's take baby steps. We flip the first coin until we get a heads. Then, the second. The process is repeated until all 30 coins show heads. Each coin takes, on average, two flips to get a heads. Thus, on average, it takes 60 flips to get 30 heads. That's a lot less than 60 billion flips!

"In this example, climbing *Mount Improbable* works quite well. But this is a toy problem that ignores the crucial issues of functional viability and irreducible complexity."[217]

Dembski: "Irreducible and minimal complexity challenge the Darwinian assumption that vast improbabilities can always be broken into manageable probabilities. What evidence there is suggests that such instances of biological complexity must be attained simultaneously. . . . In such cases, gradual Darwinian improvement offers no help in overcoming their improbability."[218]

"Behe's logical point is that irreducible complexity renders biological structures provably inaccessible to direct Darwinian pathways. Behe's empirical point is that the failure of evolutionary biology to discover indirect Darwinian pathways leading to irreducibly complex biological structures is pervasive and systemic, and that such a failure is reason to doubt that indirect Darwinian pathways are the answer to irreducible complexity."[219]

Wells and Dembski: "Appealing to the Darwinian mechanism to explain irreducibly complex molecular machines does itself constitute an argument from ignorance: from the absence of evidence for how such machines arose, Darwinists conclude that they must nonetheless have evolved by Darwinian means. This is Darwinism of the gaps."[220]

Dembski: "At best, biologists have been able to isolate subsystems of such systems that perform other functions. But any reasonably complicated machine always includes subsystems that can perform functions distinct from the original machine. . . . What's needed is a seamless Darwinian account that's both detailed and testable of how subsystems undergoing coevolution could gradually transform into an irreducibly complex system."[221]

Behe: "There's no reason that individual components of an irreducibly complex system could not be used for separate roles, or multiple separate roles, and I never wrote that they couldn't. Rather, for an IC system I wrote that 'the removal of any one of the parts causes the system to effectively cease functioning'—*system*, not *parts*."[222]

Luskin: "Of course a bolt out of my engine could serve some other purpose in my car. However this observation does not explain how many complex parts such as pistons, cylinders, the camshaft, valves, the crankshaft, sparkplugs, the distributor cap, and wiring came together in the appropriate

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[217] Robert J. Marks II, William A. Dembski, and Winston Ewert, *Introduction to Evolutionary Informatics*, Kindle edition (Singapore: World Scientific Publishing, 2017), 161. Page number reflects the Kindle edition mapped to ISBN 9813142146 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "baby steps can"; for print readers, the page number provides approximate placement.

[218] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 112.

[219] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 296.

[220] Jonathan Wells and William A. Dembski, "General Notes," in *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), CD-ROM, 43.

[221] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 295.

[222] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 260.

configuration to make a functional car engine. Even if all of these parts could perform some other function in the car (which is doubtful), how were these parts assembled properly to construct a functional engine? The answer requires intelligent design."[223]

Davis & Kenyon: "Like a car engine, biological systems can only work after they have been assembled by someone who knows what the final result will be."[224]

Behe: "The parts of the system have to automatically find each other in the cell. They can't be arranged by an intelligent agent, as a mousetrap is. To find each other in the cell, interacting parts have to have their surfaces shaped so that they are very closely matched to each other. Originally, however, the individually acting components would not have had complementary surfaces. So all of the interacting surfaces of all of the components would first have to be adjusted before they could function together, and only then would the new function of the composite system appear. Thus the problem of irreducibility remains, even if individual components separately have their own functions."[225]

"Analogous parts playing other roles in other systems cannot relieve the irreducible complexity of a new system; the focus simply shifts from 'making' the components to 'modifying' them."[226]

Luskin: "Merely having the parts available in the cell does not account for how the parts of an irreducibly complex system will suddenly assemble and then interact properly to perform some new function."[227]

Behe: "How long would it take for two proteins, that originally did not interact, to evolve the ability to bind each other by random mutation and natural selection, if binding only occurs when all positions have the correct residue in place?

"Although it would be difficult to experimentally investigate this question, the process can be simulated on a computer."[228]

Luskin: "Behe and physicist David Snoke have performed computer simulations and theoretical calculations showing that the Darwinian evolution of a functional bond between two proteins would be highly unlikely to occur in populations of multicellular organisms under reasonable evolutionary timescales."[229]

G. Kemper, H. Kemper, & Luskin: "Merely having the necessary parts available is not enough to build

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[223] Casey Luskin, "Do Car Engines Run on Lugnuts? A Response to Ken Miller & Judge Jones's Straw Tests of Irreducible Complexity for the Bacterial Flagellum," *Discovery Institute*, 19 April 2006, https://www.discovery.org/a/3718/ : accessed 29 October 2025.

[224] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 145.

[225] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 39. Page number reflects the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "system have to"; for print readers, the page number provides approximate placement.

[226] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 112–113.

[227] Casey Luskin, "Finding Intelligent Design in Nature," in H. Wayne House, ed., *Intelligent Design 101: Leading Experts Explain the Key Issues* (Grand Rapids, MI: Kregel Publications, 2008), 88.

[228] Michael Behe, "Best of Behe: Blind Evolution or Intelligent Design? An Address at the American Museum of Natural History," *Science and Culture Today*, 18 December 2016, https://scienceandculture.com/2016/12/best_of_behe_bl/ : accessed 29 October 2025.

[229] Casey Luskin, "Is There 'Plenty of Time' (in Texas) for the Evolution of Novelty?" *Science and Culture Today*, 27 January 2014, https://scienceandculture.com/2014/01/is_there_plenty/ : accessed 29 October 2025.

a complex system because specific assembly instructions must be followed. Cells use complex assembly instructions in DNA to direct how parts will interact and combine to form molecular machines. Proponents of co-option never explain how those instructions arise."[230]

Dembski: "The only evidence we have of successful co-optation comes from engineering."[231]

"It is well known that intelligence produces irreducibly complex systems. . . . Intelligence is thus known to be causally adequate to bring about irreducible complexity. Behe's explanatory point, therefore, is that on the basis of causal adequacy, intelligent design is a better scientific explanation than Darwinism for the irreducible complexity of biochemical systems."[232]

Moreland: "When I find evidence of irreducible complexity, I have an explanation, for irreducible complexity is a mark of intelligence."[233]

McLatchie: "In the case of some irreducibly complex systems, such as bacterial cell division or the DNA replication machinery, the option of co-optation does not exist since these processes are fundamental to self-replication, which is in turn a prerequisite for differential survival (i.e., natural selection)."[234]

Minnich & Meyer: "In all irreducibly complex systems in which the cause of the system is known by experience or observation, intelligent design or engineering played a role [in] the origin of the system. Given that neither standard neo-Darwinism, nor co-option has adequately accounted for the origin of these machines, or the appearance of design that they manifest, one might now consider the design hypothesis as the best explanation for the origin of irreducibly complex systems in living organisms. That we have encountered systems that tax our own capacities as design engineers, justifiably lead us to question whether these systems are the product of undirected, un-purposed, chance and necessity. Indeed, in any other context we would immediately recognize such systems as the product of very intelligent engineering."[235]

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[230] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 101.
[231] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 277.
[232] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 297.
[233] J.P. Moreland, "Intelligent Design and the Nature of Science," in H. Wayne House, ed., *Intelligent Design 101: Leading Experts Explain the Key Issues* (Grand Rapids, MI: Kregel Publications, 2008), 61.
[234] Jonathan McLatchie, "A Misguided Critique of Irreducible Complexity," *Science and Culture Today*, 7 March 2024, https://scienceandculture.com/2024/03/a-misguided-critique-of-irreducible-complexity/ : accessed 29 October 2025.
[235] S. A. Minnich and S. C. Meyer, "Genetic Analysis of Coordinate Flagellar and Type III Regulatory Circuits in Pathogenic Bacteria," in M. W. Collins and C. A. Brebbia, eds., *Design and Nature II* (Southampton: WIT Press, 2004), 302; digital facsimile, *WIT Transactions on Ecology and the Environment* 73 (2004), https://www.witpress.com/elibrary/wit-transactions-on-ecology-and-the-environment/73/12393 : accessed 10 November 2025.

Section 8

8.1 Dialogue in *Reason in the Balance*:

> **Winnie:** Good question [Stephen]. I think we should look at the arguments and context. The concerns you're raising were ones that Darwin was quite aware of when he published *On the Origin of Species*. He knew that he was up against the belief in creationism, which was really strong at the time. In fact, you really can't understand his book if you don't know the creationist/Genesis theory that he was up against and how widely it was accepted among scientists of that time. One of the most striking aspects of *On the Origin of Species* is how careful Darwin is to acknowledge and address objections to his theory.[236]

8.2 Authors of *Reason in the Balance*

Bailin & Battersby: "Darwin's theory was put forth at a time when the creationist account . . . was widely believed by both laypeople and scientists. Because it was a challenge to existing scientific views and dominant religious views, Darwin accepted that his theory had to meet a strong burden of proof."[237]

8.3 Extended Dialogue

8.3.1 Darwin's *Origin of Species*, the Burden of Proof, and Early Scientific Dissent

Koons: "The argumentative structure of the book [*The Origin of Species*] concedes that the presumption of reason lies with intelligent creation. Moreover, Darwin recognized that he could not yet shift the burden of proof. He was concerned, quite justifiably, with providing enough provisional evidence to create an atmosphere of open-mindedness. . . .

". . . The burden of proof was never met, and the presumption of design never rebutted."[238]

Shedinger: "The *Origin* is usually treated as Darwin's magnum opus, a characterization in keeping with Darwinian mythology but out of step with Darwin's own view of his work."[239]

"Arguably the most famous scientific treatise in the Western scientific canon was considered by its

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[236] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 311.
[237] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 311.
[238] Robert C. Koons, "The Check is in the Mail: Why Darwinism Fails to Inspire Confidence," in William A. Dembski, ed., *Uncommon Dissent: Intellectuals Who Find Darwinism Unconvincing* (Wilmington, DE: ISI Books, 2004), 7–8.
[239] Robert Shedinger, "Does the World Need Another Book About Darwin?" *Science and Culture Today*, 13 February 2024, https://scienceandculture.com/2024/02/does-the-world-need-another-book-about-darwin/ : accessed 29 October 2025.

author to be nothing more than a mere abstract, lacking many of the facts, evidence, and authorities on which its conclusions are based. To be sure, *The Origin of Species* outlined a new evolutionary theory, but it proved nothing about whether that theory was at all consistent with what actually happens in nature."[240]

"Once the *Origin* was in circulation, Darwin's many correspondents anticipated that he would quickly follow up with the publication of his big book on species so they could better evaluate the argument for natural selection made in the *Origin*. Indeed, Darwin himself created this expectation both in the *Origin* and in his correspondence. Even early reviewers of the *Origin* noted the lack of empirical evidence for natural selection but gave Darwin the benefit of the doubt since the *Origin* was a mere abstract and therefore could not be expected to provide all the evidence."[241]

"Darwin, counter to the widespread Darwinian mythology of today, never established the theory of evolution by natural selection in any empirically convincing way."[242]

"The importance of Darwinism isn't so much in its scientific merit, but in its role of 'scientizing' the emerging field of biology by divorcing it from its religious roots in 19th-century natural history and natural theology."[243]

"The *Origin of Species* has dubious scientific value. The fact that it gets treated as seminal is a clear testament to the artificial and ideological nature of the entire edifice of the evolutionary theory that is built upon it."[244]

Bouma: "By the time of the sixth edition of *The Origin of Species* in 1872, approximately one-third of his book consisted of his responses to 37 scientific arguments against his theory (all of which still have merit today)."[245]

Shedinger: "Loren Eiseley famously noted how Darwin's attempt to address criticisms led later editions of the *Origin* to become increasingly self-contradictory and less convincing."[246]

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[240] Robert F. Shedinger, *Darwin's Bluff: The Mystery of the Book Darwin Never Finished*, Kindle edition (Seattle: Discovery Institute Press, 2024), 119. Page number reflects the Kindle edition mapped to ISBN 1637120370 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "arguably"; for print readers, the page number provides approximate placement.

[241] Robert Shedinger, "Does the World Need Another Book About Darwin?" *Science and Culture Today*, 13 February 2024, https://scienceandculture.com/2024/02/does-the-world-need-another-book-about-darwin/ : accessed 29 October 2025.

[242] Robert F. Shedinger, *Darwin's Bluff: The Mystery of the Book Darwin Never Finished*, Kindle edition (Seattle: Discovery Institute Press, 2024), 198–199. Page numbers reflect the Kindle edition mapped to ISBN 1637120370 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "Darwin counter"; for print readers, the page range provides approximate placement.

[243] Robert Shedinger, "Darwinian Mythology in Strickberger's *Evolution*," *Science and Culture Today*, 14 July 2020, https://scienceandculture.com/2020/07/darwinian-mythology-in-strickbergers-evolution/ : accessed 29 October 2025.

[244] Robert Shedinger, "Darwin's Reticence: How on Earth Did the *Origin of Species* Ever Get Published?" *Science and Culture Today*, 10 February 2022, https://scienceandculture.com/2022/02/darwins-reticence-how-on-earth-did-the-origin-of-species-ever-get-published/ : accessed 29 October 2025.

[245] Herman B. Bouma, "I Got Canceled by the National Science Teaching Association," *Science and Culture Today*, 23 March 2023, https://scienceandculture.com/2023/03/i-got-canceled-by-the-national-science-teaching-association/ : accessed 29 October 2025.

[246] Robert Shedinger, "Darwinian Mythology in Strickberger's *Evolution*," *Science and Culture Today*, 14 July 2020, https://scienceandculture.com/2020/07/darwinian-mythology-in-strickbergers-evolution/ : accessed 29 October 2025.

Behe: "All told, Darwin's theory has generated dissent from the time it was published, and not just for theological reasons. . . .

". . . From Mivart to Margulis, there have always been well-informed, respected scientists who have found Darwinism to be inadequate."[247]

Thomas: "Mivart was by no means an outlier since a veritable cohort of sympathizers rose up in the 1860s and 1870s to create a very audible chorus of dissent, and for much the same reasons as that dissent continues unabated to the present day."[248]

8.3.2 The Cultural and Philosophical Forces Behind Darwin's Early Reception

Wells: "It is often claimed that people in the nineteenth century were converted to Darwin's theory because he provided so much evidence for it, but this is not true. . . . People were converted to Darwin's theory mainly because it fit the increasingly materialistic tenor of the times."[249]

Wiker: "[Evolution] had been circulating in radical circles in England and France for at least a half-century before [Charles Darwin] was born."[250]

Moreland: "The shift to Darwinism from a theism-centered view of biology in particular and science in general was largely a philosophical move to redefine the nature of science."[251]

Pearcey: "Both Darwin's supporters and opponents understood that philosophical naturalism was the central issue."[252]

Dembski: "Charles Darwin . . . delivered the design argument its biggest blow. Darwin was ideally situated historically to do this. His *Origin of Species* . . . fit perfectly with an emerging positivistic conception of science that was loath to invoke intelligent causes and sought as far as possible to assimilate scientific explanation to unbroken natural law. Hence, even though Darwin's selection mechanism remained much in dispute throughout the second half of the nineteenth century, the mere fact that Darwin had proposed a plausible naturalistic mechanism to account for biological systems was enough to convince the Anglo-American world that some naturalistic story or other had to be true."[253]

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[247] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 30.
[248] Neil Thomas, "A Neglected Dissenter from Darwinism: St. George Mivart," *Science and Culture Today*, 5 October 2025, https://scienceandculture.com/2025/10/a-neglected-dissenter-from-darwinism-st-george-mivart/ : accessed 29 October 2025.
[249] Jonathan Wells, *Zombie Science: More Icons of Evolution*, Kindle edition (Seattle: Discovery Institute Press, 2017), 19–20. Page numbers reflect the Kindle edition mapped to ISBN 1936599449 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "is often claimed"; for print readers, the page range provides approximate placement.
[250] Benjamin Wiker, "Charles Darwin," *Science and Culture Today*, n.d., https://scienceandculture.com/i/charles-darwin/ : accessed 29 October 2025.
[251] J.P. Moreland, "Intelligent Design and the Nature of Science," in H. Wayne House, ed., *Intelligent Design 101: Leading Experts Explain the Key Issues* (Grand Rapids, MI: Kregel Publications, 2008), 44.
[252] Nancy Pearcey, "You Guys Lost, Is Design a Closed Issue?" *Access Research Network*, 10 November 1999, https://www.arn.org/docs/pearcey/np_youguyslost.htm : accessed 26 August 2025.
[253] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 68.

Pearcey: "Darwin's theory seemed to show that a completely naturalistic account of living things was possible; as a result, it attracted many supporters whose main interest was in promoting naturalism, even if they shrugged off the theory's scientific details. . . .

". . . Darwin illustrated how one might frame a completely naturalistic account of living things—an accomplishment that was attractive to those whose metaphysical stance was naturalistic, and to others who felt that at least science itself should be completely naturalistic. . . . It was not the specifics of Darwin's theory so much as his naturalistic methodology that attracted support."[254]

Joshua: Cultural historian Jacques Barzun wrote: "What brought [Darwin] rapid victory and prolonged sway over his age was . . . the ability of the age to recognize itself in him."[255]

Pearcey: "Neal Gillespie, in *Darwin and the Problem of Creation*, sums up the point neatly: 'It is sometimes said that Darwin converted the scientific world to evolution by showing them the process by which it had occurred. Yet the uneasy reservations about natural selection among Darwin's contemporaries and the widespread rejection of it from the 1890s to the 1930s suggest that this is too simple a view of the matter. It was more Darwin's insistence on *totally natural explanations* than on natural selection that won their adherence.'"[256]

Dilley: "While a number of Darwin's contemporaries in the mid-nineteenth century were creationists, a turn toward the naturalization of biology was in the air. Indeed . . . , methodological naturalism was the product of religious men, had been 'on the table' for nearly 500 years, was reaffirmed by prominent philosophers of science, including Francis Bacon whose mark was felt on nineteenth-century science, and had by the 1800s encompassed almost every area of science besides biology."[257]

Thomas: "When Darwin wrote of natural processes in contradistinction to divine modes of creation, he was pushing at an open door because his audience *wanted* to believe him."[258]

Flannery: "Darwin's idea of a wholly materialistic/naturalistic explanation was an idea whose time had come."[259]

Joshua: R.F. Baum wrote: "When *Origin of the Species* came from the press in 1859 both philosophical naturalism and its surrogate for religious hope, the idea of Progress, were in ascendance.[260]

Bethell: "The widespread public acceptance of biological evolution in Darwin's day was probably a product of the simultaneous faith in Progress. Darwin's theory was accepted as readily as it was because it shared in the general belief that things were getting better. It's not that the organisms themselves were being swept along, but that European and then American intellectuals believed that

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[254] Nancy Pearcey, "You Guys Lost, Is Design a Closed Issue?" *Access Research Network*, 10 November 1999, https://www.arn.org/docs/pearcey/np_youguyslost.htm : accessed 26 August 2025.
[255] Jacques Barzun, *Darwin, Marx, Wagner: Critique of a Heritage*, Phoenix ed. (Chicago: University of Chicago Press, 1981), 80.
[256] Nancy Pearcey, "You Guys Lost, Is Design a Closed Issue?" *Access Research Network*, 10 November 1999, https://www.arn.org/docs/pearcey/np_youguyslost.htm : accessed 26 August 2025.
[257] Stephen Craig Dilley, *Methodological Naturalism, History, and Science* (Ph.D. diss., Arizona State University, 2007), 163; digitized copy privately held by the author.
[258] Neil Thomas, "Three Thousand Years of Darwinism," *Science and Culture Today*, 23 December 2024, https://scienceandculture.com/2024/12/three-thousand-years-of-darwinism/ : accessed 29 October 2025.
[259] Michael Flannery, "Darwinian Evolution: A Scientific Pip-Squeak in a Suit of Cultural Armor," *Science and Culture Today*, 7 July 2011, https://scienceandculture.com/2011/07/darwinian_evolution_a_scientif/ : accessed 29 October 2025.
[260] R. F. Baum, *Doctors of Modernity: Darwin, Marx, & Freud* (Peru, IL: Sherwood Sugden, 1988), 14.

everything was improving."[261]

Wiker: "Many have pointed out how Charles Darwin's 'mechanism' of natural selection fit all too neatly into the more comprehensive social, political, and intellectual context of the late eighteenth and early nineteenth centuries. But that is only part of the story. It fit just as neatly into the even more comprehensive secularizing movements that stretched back to the mid seventeenth century (and beyond)."[262]

Flannery: "The acceptance of Darwinism is more accurately found in its rapid transmission and acceptance by a largely nonscientific, self-appointed 'smart set' of highbrows and somewhat later middlebrow wannabes. . . . We can only speculate on the degree to which this broad general acceptance of Darwinian evolution as a worldview, a creation myth that served as the metaphysical foundation for a modernist mentality, influenced the scientific community, but that it had none is unlikely. In any case, the real power of the paradigm came from the former rather than the latter.

"Understood in this context, Darwinism is not properly construed as simply a scientific idea that transformed society but rather as a metaphysic based upon a dogmatic methodological naturalism that had been brewing in England for some time. . . . Gertrude Himmelfarb keenly observes 'that it was less as intelligent men "accustomed to scientific argument" that they judged and approved the Origin than as intelligent men susceptible to philosophical prejudice.' . . . 'Darwin,' concludes Himmelfarb, 'dramatizing and bringing to a climax the ideas, sentiments, and conjectures of his age, may be thought of as the hero of a conservative revolution.'"[263]

Pearcey: "In considering how Darwin won the day, we must not ignore politics. The changes sought by nineteenth-century Darwinists were not only intellectual but also institutional. . . .

"Many scientists are understandably uncomfortable with the idea that skill in politics and public relations help a theory gain acceptance. They like to believe that the dominant factor in the success of a theory is the objective evidence in its favor. Yet sociologists of knowledge are right in stressing that science is to some extent a social process, and that an advantage is gained by those who are skillful at controlling the social process, at attracting supporters while isolating opponents.

"In hindsight, the strategies pursued by the nineteenth-century Darwinists are clear. Before publishing the *Origin*, Darwin carefully cultivated a nucleus of biologists who were prepared to support his work. These early converts then followed basic political strategies: They presented a unified front in public; they conceded minor points in order to make major points; they were willing to accept as allies people who disagreed over the details; they minimized open controversy that might alienate doubters and fence-sitters, while cultivating younger scientists who were open to the new ideas. In this way, the Darwinians gradually gained a majority. Their supporters were able to influence the educational system as teachers. They took control of the editorial process at scientific periodicals so that editors and referees became willing to accept papers from a Darwinian viewpoint. The new

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[261] Tom Bethell, *Darwin's House of Cards: A Journalist's Odyssey Through the Darwin Debates*, Kindle edition (Seattle: Discovery Institute Press, 2017), 256. Page number reflects the Kindle edition mapped to ISBN 1936599414 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for "widespread public"; for print readers, the page number provides approximate placement.

[262] Benjamin Wiker, *The Darwin Myth: The Life and Lies of Charles Darwin* (Washington, DC: Regnery Publishing, 2009), 137.

[263] Michael Flannery, "How Was Darwin's Theory Accepted? The Curious History of a Secular Creation Myth, or, Darwin's Cultural Armor, pt. 2," *Science and Culture Today*, July 27, 2011, https://scienceandculture.com/2011/07/how_was_darwins_theory_accepte/ : accessed October 29, 2025.

journal *Nature* was founded at least in part as a vehicle for spreading the Darwinian message. Darwin won the day in part because his supporters were adept at employing PR tactics, and they simply out-maneuvered their rivals."[264]

Johnson: "Many of Darwin's early supporters were either clergymen or devout laymen. . . . Supporters of 'evolution' included not just persons we would think of as religious liberals, but conservative Evangelicals. . . . Two specific factors influenced this support: (1) religious intellectuals were determined not to repeat the scandal of the Galileo persecution; and (2) with the aid of a little self-deception, Darwinism could be interpreted as 'creation wholesale' by a progress-minded Deity acting through rationally accessible secondary causes."[265]

[264] Nancy Pearcey, "You Guys Lost, Is Design a Closed Issue?" *Access Research Network*, 10 November 1999, https://www.arn.org/docs/pearcey/np_youguyslost.htm : accessed 26 August 2025.
[265] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 205.

Section 9

9.1 Dialogue in *Reason in the Balance*:

> **Winnie:** Do you remember the concept of argument to the best explanation? Darwin's strategy was a clear case of that. He shows that the creationist accounts can't explain what we know about species and the fossil record but his theory can. In other words, his theory is better than the competing explanations.[266]

9.2 Extended Dialogue

9.2.1 The Theological Structure in Darwin and His Successors

Hunter: "In dealing with the many evidential problems, it was the theology that saved the theory. Darwin provided lengthy discussions of the science, but in the end, it was theology that provided strong evidence. Researchers have long since noted that Darwin's strong arguments for evolution had a peculiar structure. Rather than present compelling positive evidence for his theory, these arguments were contrastive, providing support for his theory by virtue of rebuking an alternative."[267]

"Darwin's theological claims had convinced people *that* evolution had occurred, not *how* evolution occurred."[268]

"Darwin had a long list of biological quandaries that did not fit with the view of God that was popular in his day."[269]

"Negative theology was a consistent theme for Darwin, and it remains popular with today's evolutionists."[270]

"The evolutionist's notion of God and divine creation is, for many people, just a straw man—an overly simplified metaphysic that conveniently supports their views."[271]

Rammerstorfer: "The first and probably most important point is that such arguments are based on certain conceptions of the 'planning agency.' *Whether* and *how* they are accurate depends on *one's own* conception of the *planning agency* and its *actions*. . . . When arguments are made for evolution and against planning in this area, it should be noted that these arguments are theological in nature.

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[266] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 312.
[267] Cornelius Hunter, "Evolution as a Theological Research Program," *Religions* 12, no. 9 (2021): 694 [PDF p. 6], https://doi.org/10.3390/rel12090694 : accessed 10 November 2025.
[268] Cornelius Hunter, "Evolution as a Theological Research Program," *Religions* 12, no. 9 (2021): 694 [PDF p. 18], https://doi.org/10.3390/rel12090694 : accessed 10 November 2025.
[269] Cornelius G. Hunter, *Darwin's God: Evolution and the Problem of Evil* (Grand Rapids, Mich.: Brazos Press, 2001), 13.
[270] Cornelius G. Hunter, *Darwin's God: Evolution and the Problem of Evil* (Grand Rapids, Mich.: Brazos Press, 2001), 47.
[271] Cornelius G. Hunter, *Darwin's God: Evolution and the Problem of Evil* (Grand Rapids, Mich.: Brazos Press, 2001), 49.

An appropriate response must therefore also be made on this level."[272]

Dilley & Tafacory: "In presenting the case for evolutionary theory, a number of [biology] texts seem to assume that arguments which favor evolution over nineteenth century special creation, as they construe it, likewise favor evolution over contemporary creationism or intelligent design. But arguments that address a past foe are not always relevant to a present adversary."[273]

9.2.2 The Definition of Species and the Boundaries of Biological Change

Cassell: "The modern theory of intelligent design has more in common with evolutionary theory than with Paley, since the capacity of plants and animals to adapt to changing environments is understood as fully compatible with a design perspective; after all, an adaptable engineering design is superior to an inflexible one, all other things being equal."[274]

"Design theorists happily acknowledge that species vary within a range and often in response to environmental changes. Indeed, one line of design reasoning draws on engineering principles to argue that the capacity of biological forms to adapt is evidence of a form of sophisticated design and is therefore additional evidence for these systems being the work of not just intelligent design but of highly intelligent design."[275]

Lönnig: "Species are certainly not constant in the absolute sense that Linnaeus initially believed."[276]

Davis & Kenyon: "Change is limited to variation within existing groups of plants and animals. Yet within those boundaries, there can be rich diversity."[277]

Junker & Scherer: "Even in a population in which no new mutations occur, new alleles and allele combinations could arise for many generations, whose carriers must continually assert themselves in their environment. This results in enormous genetic flexibility, which plays an important role in *Micro*evolutionary processes."[278]

Lönnig: "***The original species, with their greater genetic potential, possessed a wide adaptability to***

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[272] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 68. Quoted passage translated from German.

[273] Stephen Dilley and Nicholas Tafacory, "Damned if You Do and Damned if You Don't: The Problem of God-talk in Biology Textbooks," *Communications of the Blyth Institute* 1, no. 2 (2019): orig. p. 44 [PDF p. 8], https://journals.blythinstitute.org/ojs/index.php/cbi/article/view/44/44 : accessed 10 November 2025. The PDF facsimile is accessible via DOI https://doi.org/10.33014/issn.2640-5652.1.2.dilley.1

[274] Eric Cassell, *Animal Algorithms: Evolution and the Mysterious Origin of Ingenious Instincts* (Seattle: Discovery Institute Press, 2021), 170.

[275] Eric Cassell, *Animal Algorithms: Evolution and the Mysterious Origin of Ingenious Instincts* (Seattle: Discovery Institute Press, 2021), 196–197.

[276] Wolf-Ekkehard Lönnig, *Ursprung und Entwicklung des Pflanzenreichs im Spiegel älterer und moderner Auffassungen: Kritische Betrachtung unter Auswahl geeigneter Beispiele* (MSc thesis, University of Berlin, 1971), 105 (PDF pagination); digital file, https://www.weloennig.de/Staatsexamensarbeit.pdf : accessed 6 December 2025. Quoted passage translated from German. The PDF version consulted includes addenda not present in the original thesis.

[277] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 15–16.

[278] Reinhard Junker and Siegfried Scherer, "Die Reichweite der Evolutionsfaktoren," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 61. Quoted passage translated from German.

all possible environmental conditions. Over time, this wide adaptability was increasingly restricted by the accumulation of weakly disadvantageous alleles (as well as total losses of gene functions redundant at the location) in the respective areas (with the exception, of course, of the part necessary for the specific environmental coping.). Other lines and forms of the same species, however, have not yet degenerated to this extent and accordingly still possess greater adaptability. Through the mutational degradation of genetic potential, the modifications become 'heritable' over time. However, as strange as it may initially sound, this has nothing to do with the inheritance of acquired traits. The traits were not acquired evolutionarily, but were present from the beginning with the greater adaptability. Of this adaptive potential, in many species, only the areas necessary for the respective environmental conditions have been retained. The 'rest' has been lost through mutations (accumulation of weakly disadvantageous alleles) – forming secondary species. Part of the lost potential can be regained through recombination. . . . Mutations and transposon activities contribute to variability and microevolution in secondary species."[279]

Scherer: "According to the hypothesis of polyvalent ancestral forms, the variability of basic types and their microevolutionary splitting into species and genera would not be primarily due to the evolutionary emergence of new alleles, but on genetically *encoded variation*. The extent of the possible variations would be predetermined and thus limited."[280]

Reeves: "The genomes of Darwin's finches were re-sequenced in 2015 by researchers led by Peter and Rosemary Grant, along with colleagues from Uppsala University. . . . Interestingly, their work allowed them to report that the genetic variation underlying the finch beak changes had pre-existed in the population. . . .

"We see that, in the most classic example of 'evolution happening before our eyes,' genetic variation was present *before* the adaptive radiation."[281]

Hunter: "When evolutionists use evidence against fixity of species to lend credence to evolution, they incorporate a particular metaphysical notion into a scientific theory: Evolution is supported by the premise that God must make species absolutely fixed—beaks must not get longer and coloration must not change. And since beaks do get longer and coloration does change, we know that God must not have created them."[282]

Behe: "It now seems reasonable to draw the line between the levels of family and genus. That is, chance plus selection can indeed give rise to both new species and new genera, just as Darwin envisioned, just as they did in the Galápagos. That's crucially important in enabling groups of organisms to diversify and fill disparate environmental niches. But, as a first approximation, Darwinian processes (or for that matter any other nonintelligently planned process*) cannot produce descendants*

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[279] Wolf-Ekkehard Lönnig, *Die Evolution der karnivoren Pflanzen: Was die Selektion nicht leisten kann – das Beispiel Utricularia (Wasserschlauch)*, 3rd improved edition (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2012), 30n46 [PDF p. 44]; digital file, https://www.weloennig.de/Utricularia2011Buch.pdf : accessed 9 December 2025. Quoted passage translated from German.

[280] Reinhard Junker, "Deutungen des Lebens unter der Voraussetzung von Schöpfung," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 325, sec. 16.4; subsection authored by Siegfried Scherer. Quoted passage translated from German.

[281] Emily Reeves, "Optimization: The Engineering Explanation for 'Evolution Happening Before Our Eyes,'" *Science and Culture Today*, 22 October 2025, https://scienceandculture.com/2025/10/optimization-the-engineering-explanation-for-evolution-happening-before-our-eyes/ : accessed 29 October 2025.

[282] Cornelius G. Hunter, *Darwin's God: Evolution and the Problem of Evil* (Grand Rapids, Mich.: Brazos Press, 2001), 64.

that differ from their ancestor at the level of family or higher."[283]

Lönnig: "Evolution within the boundaries of the systematic category of a family appears to be not only possible in several cases but also definitely probable."[284]

"I accept the existence of phylogenetic (horizontal and downward) evolution of literally millions of systematic species and thousands of morphological genera of the animal and plant kingdoms."[285]

"[I] have no problem in conceding . . . that mutations and selection, as well as genetic drift, might essentially be involved in microevolution, i.e. the formation of races and subspecies as well as some higher systematic categories as species and genera, which were originated by losses of gene functions, as for example, the many cases of losses of flying abilities in insects and birds on islands around the world, losses of scales in fish species in closed lakes, losses of dispersion systems in island plants, organ losses in cave animals etc."[286]

Meis: "One should not conclude that such loss mutations explain higher development (macroevolution). After all, the blind fish developed from the sighted fish and not the other way around! Afterwards, what was there before is gone – the exact opposite of higher development."[287]

Junker: "Organs can become rudimentary under certain environmental conditions and thus lose their function partially or completely in a microevolutionary manner."[288]

Davis & Kenyon: "Genetic drift, fixation, the founder effect, and the bottleneck effect . . . are each based upon losses of certain genes."[289]

Joshua: But what about horizontal gene transfer?

G. Kemper, H. Kemper, & Luskin: "The [horizontal gene transfer] process has been observed in

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[283] Michael J. Behe, *Darwin Devolves: The New Science About DNA That Challenges Evolution*, Kindle edition (HarperOne, 2024), 156. Page number reflects the Kindle edition mapped to ISBN 0062842617 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "now seems"; for print readers, the page number provides approximate placement.

[284] Wolf-Ekkehard Lönnig, *Origin and Evolution of the Rhinos (Family Rhinocerotidae): What Do We Really Know? Applying Our Previous Tests for Gradualism, Punctuated Equilibrium and Intelligent Design Now Also on the Rhinos* (Preliminary Internet version, 5 May 2023; revised thereafter), 31; digital file, https://www.weloennig.de/Rhinoceros.pdf : accessed 10 November 2025.

[285] Wolf-Ekkehard Lönnig, correspondence to Mr. A., 8 March 2000, "2) Naturwissenschaftliche Diskussion von Lösungsvorschlägen zu Nachtweys Utricularia-Kritik," in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/Wasserschlauch.html : accessed 4 November 2025. Quoted passage translated from German.

[286] Wolf-Ekkehard Lönnig, "Mutation Breeding, Evolution, and the Law of Recurrent Variation," *Recent Research Developments in Genetics & Breeding*, vol. 2 (Trivandrum, India: Research Signpost, 2005), 63 [PDF p. 19]; PDF reprint, slightly corrected 1 December 2007, https://www.weloennig.de/Loennig-Long-Version-of-Law-of-Recurrent-Variation.pdf : accessed 9 November 2025.

[287] Karl-Friedrich Meis, "Was ist Intelligent Design?" *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, https://www.intelligentdesigner.de/was-ist-intelligent-design/ : accessed 7 November 2025. Quoted passage translated from German.

[288] Reinhard Junker, "Ähnlichkeiten," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 204. Quoted passage translated from German.

[289] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 85.

nature—for example, it can spread beneficial traits like antibiotic resistance between bacteria."[290]

"While horizontal gene transfer might be a viable explanation within microorganisms, in higher organisms such as animals it is not a well-demonstrated mechanism of change."[291]

Lönnig: "B**acteria have a microevolutionary potential that is simply not available to most other organisms.** It is *'scientifically dubious and unjustifiable'* to want to deny these facts. The recognition of these facts, however, calls into question the naïve transfer of the knowledge gained from bacteria from microevolution to the evolution of higher organisms insofar as we **cannot fundamentally conclude** that what is possible with bacteria also applies to humans."[292]

G. Kemper, H. Kemper, & Luskin: "It's important to note that horizontal gene transfer does not create new genes."[293]

Lönnig: "Insofar as horizontal gene transfer by retroviruses plays any role at all in the origin of life forms, it is likely to be a subordinate role beyond the origin of the (primary) species."[294]

Luskin: "Perhaps DNA sequences that are often called 'ERVs' often did not originate as viral insertions, but were intelligently designed as vital parts of our genome which play important immunoresponse roles to viral infections. Under this view, the reason these ERV-like sequences resemble (to one degree or another) viral DNA is because these similarities are *required* for their functional role to mimic or interact with real viral DNA during an immunoresponse. This is an intriguing new way to understand 'ERVs' — not as viral fossils, but as vital components of our immune system."[295]

Joshua: Does the term "kinds" as used in the Biblical Genesis account refer to the species level?

Remine: "Historically, scientists selected the word 'species' because it is the Latin word for kinds."[296]

Lönnig: "A source with a background in Hebrew comments concerning 'species': '…it should be noted that this term is not found in the Bible book of Genesis. There we find the term "kind," which is much broader in meaning. Often, what scientists choose to call the evolution of a new species is simply a

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[290] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 148.
[291] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 255n37.
[292] Wolf-Ekkehard Lönnig, correspondence to Dr. V. (pseudonym), 8 January 2001, published in Wolf-Ekkehard Lönnig, *Diskussion von Einwänden zu dem Artikel "Hoimar von Ditfurth und der Lederbergsche Stempelversuch: Sind Antibiotikaresistenzen ein Beweis für die Makroevolution im Labor?"*, https://www.weloennig.de/Bakterienresistenzen.html : accessed 17 November 2025. Quoted passage translated from German.
[293] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 254n22.
[294] Wolf-Ekkehard Lönnig, excerpts from correspondence with Dr. A. (exchange of letters dated 10 February 1996 and 20 April 1996), published in "Wird die Aussage, 'dass der Species feste Grenzen gesteckt sind,' durch horizontalen Gentransfer widerlegt?" Auszüge aus der Diskussion mit Herrn Dr.A. (Briefwechsel vom 10.2.1996 und vom 20.4.1996), in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/mendel23.htm : accessed 4 November 2025. Quoted passage translated from German.
[295] Casey Luskin, "Junk No Longer: ERVs Are 'Integral' and 'Important Components' of Immune Responses," *Science and Culture Today*, 9 July 2021, https://scienceandculture.com/2021/07/junk-no-longer-paper-reports-endogenous-retroviruses-are-integral-and-important-components-of-immune-responses/ : accessed 29 October 2025.
[296] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 512.

matter of variation within a "kind," as the word is used in the Genesis account.'"[297]

Remine: "Species no longer means what it once did. Species and kinds are not the same."[298]

Lönnig: "The numbers of what I have called 'primary species' ('primäre Arten'), more generally known as 'kinds', are often approaching the numbers of genera and families of the [gall-host] plants and [gall-inducing] animals . . . in contrast to the usually enormous numbers presented by the morphological species concept or the species concept of the synthetic theory.

"However, the question has to be decided on a case-by-case basis. A comprehensive generalization for all life forms is not possible. A primary species can also largely be identical with a species of modern systematics."[299]

Luskin: "Evolutionary biologists typically define 'species' as a reproductively isolated population of individuals. . . . This classical definition is called the biological species concept. Under this standard definition, speciation entails the origin of such a reproductively isolated population. But does it entail anything else?

"Not necessarily. Such definitions say nothing about the degree of morphological, behavioral, or genetic change that has evolved. Thus, *such a definition of 'species' does not necessarily imply that significant biological change has taken place between the two populations*. In many cases, two populations may be termed different 'species' under the biological species concept, but yet the differences between the populations are small-scale and trivial."[300]

Scherer & Junker: "Sterility can even occur *within* biospecies."[301]

Lönnig: "Applying the sterility barrier as an absolute definition of species separation would . . . lead to such strange conclusions as the species delimitation in humans in sterile marriages. . . .

"No reasonable biologist would separate species from each other in humans in this way. Pathological changes that lead to sterility must always be excluded from the genetic concept of species. However, it is important to note that pathological-genetic changes can affect not only individual persons, but also populations of individuals, whereby different populations with different genetic degradation processes (which are still tolerated within the populations) can then have a sterility barrier with each

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[297] Wolf-Ekkehard Lönnig, *Are Darwin's Finches "a particularly compelling example of speciation" as well as "evolution in action" or what else? A brief note on the question whether macroevolution is happening on the Galápagos Islands* (self-published, 23 September 2020; with supplement, 14 and 15 October 2020), 11n32; digital file, https://www.weloennig.de/NASGalapagos.pdf : accessed 9 November 2025.

[298] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 513.

[299] Wolf-Ekkehard Lönnig, *Plant Galls and Evolution (II): Natural Selection, DNA, and Intelligent Design* (10 and 21 August 2020; minor corrections 22 August 2020), 54; digital file, https://www.weloennig.de/PlantGalls.xyz.pdf : accessed 10 November 2025

[300] Casey Luskin, *Specious Speciation: The Myth of Observed Large-Scale Evolutionary Change. A Response to TalkOrigins' "Observed Instances of Speciation" FAQ*, *Discovery Institute*, 9 September 2013, https://www.discovery.org/m/2019/03/Casey-Luskin-Specious-Speciation.pdf : accessed 29 October 2025.

[301] Siegfried Scherer and Reinhard Junker, "Artbegriffe und Taxonomie," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 35, boxed section *Details zur Grundtypdefinition*. Quoted passage translated from German.

other."[302]

Scherer & Junker: "If sterility can be produced through comparatively minor changes, it is useless as a classification feature."[303]

Dembski & Wells: "Intelligent design . . . does not view reproductive isolation as the first step to major evolutionary change."[304]

Luskin: "Reproductive isolation—the mechanism that is supposed to foster evolutionary change—arises during a process requiring a reduction in the size of the gene pool. . . .

"Small populations decrease the amount of genetic information and provide fewer opportunities for new genetic information to arise."[305]

Lönnig: "Neo-Darwinism emphasizes the isolation mechanisms so strongly because it believes that it recognizes in them the basis for new, further and higher development. . . .

"Many examples show that isolation – be it of a pre- or post-zygotic nature – does not lead to higher development. The listed cases in rice, barley, rye and humans are examples of postzygotic isolation due to degeneration, the failure of functional structures. Postzygotic isolation does not have to have anything to do with speciation."[306]

"The overvaluation of prezygotic isolation mechanisms as sufficient species separation factors is caused by the neo-Darwinian goal of finding as many examples as possible of species in the process of becoming ('evolution in action') and implying with this 'evolution' the manner of origin of all life forms."[307]

"The Synthetic Theory of Evolution has a great interest in demonstrating species *in statu nascendi* in order to imply the principle of the origin of all life forms on our earth with such speciation."[308]

Davis & Kenyon: "The appearance of reproductively isolated populations represents microevolution,

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[302] Wolf-Ekkehard Lönnig, "Der genetische Artbegriff," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesIV3.html : accessed 3 November 2025. Quoted passage translated from German.

[303] Siegfried Scherer and Reinhard Junker, "Artbegriffe und Taxonomie," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 35, boxed section *Details zur Grundtypdefinition*. Quoted passage translated from German.

[304] William A. Dembski and Jonathan Wells, *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), 109.

[305] Casey Luskin, "Response to the NCSE's Reply to *Explore Evolution* on Natural Selection," *Explore Evolution*, 2 March 2010, https://exploreevolution.com/2010/03/02/response_to_the_ncses_reply_to/ : 7 November 2025.

[306] Wolf-Ekkehard Lönnig, "'Hybridensterblichkeit' beim Menschen," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesIV2.B.4.html : accessed 3 November 2025. Quoted passage translated from German.

[307] Wolf-Ekkehard Lönnig, "Die mechanische Isolation," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesIV2.A.4.html : accessed 2 November 2025. Quoted passage translated from German.

[308] Wolf-Ekkehard Lönnig, "Kreuzungspolygone," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesIV2.B.7.html : accessed 2 November 2025. Quoted passage translated from German.

not macroevolution. It is one of the ways in which horizontal diversification can occur."[309]

Lönnig: "The neo-Darwinian concept of species, with its delimitation of species as groups of natural populations that reproduce among each other and are reproductively isolated from other such groups, introduces the genetic question into the definition; however, with its prezygotic isolation mechanisms, it cancels out the consistent application of Mendel's rules for the concept of species. As has been extensively documented, the repeatedly established reversibility of these barriers leads to a chain of contradictions and difficulties that can only be solved by subsuming the phenomena under the concept of species. In the case of postzygotic isolation mechanisms, the neo-Darwinian concept of species does not distinguish between primary and secondary species barriers. By interpreting all postzygotic barriers caused by degeneration as fixed species delimitation criteria in addition to the prezygotic mechanisms, there are enormous increases in the number of species, especially among insects, despite the welcome revision with a reduction in the number of genera and species in birds and mammals, whereby the concept of twin species plays a key role. However, since the ambiguities, difficulties and contradictions found for the prezygotic isolation mechanisms also apply to a considerable part of the postzygotic barriers caused by structural degradation and further problems arise in addition . . . , all secondary isolation mechanisms for the species definition should be omitted and also subsumed under the concept of species. The method of synthetic evolutionary theory, which implies the manner of development of all life forms with the emergence of pre- and post-zygotic isolation mechanisms, misses the essential questions about the origin of species: one cannot explain the structure and synorganization of primary species with examples of loss of information and structural degradation. . . .

". . . 'If different life forms follow Mendel's rules in all characteristics in reciprocal crosses, they are members of the same species. However, the converse conclusion that life forms that cannot follow Mendel's rules in the crossbreeding analysis because of different sterility barriers therefore belong to different species is not consistently feasible.' . . . As with neo-Darwinism, the difficulties here are based on the fact that no differentiation is made between primary and secondary species barriers (caused by the degradation of genetic information). . . .

". . . The genetic-plasmic concept of species in Lamprecht's version solves the main problem of the classical-genetic species concept, namely the false converse conclusion that forms with any loss of fertility during crossing (in extreme cases even sterility) therefore already belong to different species: It separates all secondary genetic-chromosomally determined isolation mechanisms from the primary characteristics that cannot in principle be reciprocally transferred. It separates all secondary genetic-chromosomally determined isolation mechanisms from the primary characteristics that cannot be reciprocally transferred in principle. At the primary species traits are regulatory gene functions and gene chains for new physiological and anatomical systems, which in principle cannot be expressed homozygous in the plasma of the most closely related species. The reason for this is the meiotic-plasmic Control system. The origin of species thus lies primarily in the construction of new anatomical, physiological and ethological (structures and) systems (including a plasmatic barrier), through which the primary species are absolutely separated from each other and can be grasped objectively. . . .

". . . All experiences of mutation and selection research are in line with the findings on the genetic-plasmic species boundary.

". . . All areas of research show us that the variability of primary species, while tremendously rich, is

[309] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 19.

nevertheless limited.

"In addition, in connection with variability in the whole world of organisms, we find signs of degeneration which lead to the formation of secondary species."[310]

"The number of species must be reduced immensely when applying LAMPRECHT's concept of species, because

1. morphological criteria play a subordinate role
2. almost all sibling or twin species are eliminated
3. basically all 'species' that can be crossed with each other and have unrestricted fertile offspring, belong to the same species
4. purely genetic and chromosomal barriers, even in the case of strong morphological differences are only of secondary importance
5. only the absolute gene-plasma barrier decides whether real species are present or not."[311]

"If one thinks of millions of species in the sense of the morphological and also the neo-Darwinian concept of species . . . , then this can well be accurate: Millions of species and thousands of genera, which are distinguished according to these species concepts, are nothing more than populations of different recombinants of a few (basic) species according to the genetic-plasmatic concept of species."[312]

"My work in connection with the concept of species is about, among other things, the **completion of Mendel's approach**."[313]

9.2.3 The Fossil Record and the Cambrian Challenge

Lennox: "It is a widespread public impression that one of the most powerful evidences for evolution comes from the fossil record. And yet this impression does not correspond to all that is to be found in the scientific literature. Indeed, at the outset, some of Darwin's strongest objectors were palaeontologists."[314]

Luskin: "To be sure, the fossil record does contain examples of possible transitional forms. But they

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[310] Wolf-Ekkehard Lönnig, "Zusammenfassung und Schlussbetrachtung," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesVII.html : accessed 2 November 2025. Quoted passage translated from German.

[311] Wolf-Ekkehard Lönnig, "Unterschiede zwischen den Artdefinitionen," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesIIIB.html : accessed 2 November 2025. Quoted passage translated from German.

[312] Wolf-Ekkehard Lönnig, "Evolutionäre Kontinuität und Diskontinuität," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesV3.Konti.html : accessed 2 November 2025. Quoted passage translated from German.

[313] Wolf-Ekkehard Lönnig, correspondence to Prof. D. (pseudonym) and Prof. C. (pseudonym), 6 September 1994, published in "9) Stellungnahme von Prof. D. (oder wie der Neodarwinismus die Wahrnehmung einfachster Tatbestände verhindert)," in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/Wahrnehmung.html : accessed 4 November 2025. Quoted passage translated from German.

[314] John C. Lennox, *God's Undertaker: Has Science Buried God?* (Oxford: Lion Books, 2009), 113.

are rare in a record that shows rapid explosions of biodiversity and the sudden, abrupt appearance of biological novelty. Moreover, a close examination of many of these alleged transitional fossils reveals they do not agree in significant ways with the evolutionary stories they are supposed to support."[315]

Junker: "Interpretations of fossils as transitional forms are often controversial."[316]

Lönnig: "We have to make a precise distinction here between *transitional links and intermediate/ intermediary forms*: wherever there is a diversity of forms, there are necessarily also *intermediary forms*, or at least forms that are *intermediate* in certain characteristics. *Transitional links*, on the other hand, means the evolutionary theoretical interpretation of *intermediate forms* as phylogenetic links (usually) in the sense of gradualism."[317]

"Morphologic space within families like the giraffidae is not infinite and thus unavoidably entails the existence of at least some 'intermediates' (more exactly, 'mosaic forms') in any family with a plethora of genera and species, whatever their cause of origin."[318]

"An absolutely ingenious and prolific mind having generated, and sustaining, the laws of physics . . . , has the potential to create as many mosaic forms with some intermediary characters as are imaginable within functional limits, front-loaded or otherwise, but hardly so by 'infinitesimally small inherited variations', 'steps not greater than those separating fine varieties' and 'insensibly fine steps', 'for natural selection can act only by taking advantage of slight successive variations; she can never take a leap, but must advance by the shortest and slowest steps.' . . .

"So this is what the synthetic theory really needs to prove its case for the giraffidae: many continuous series in Darwin's sense, not isolated genera with some intermediary features appearing as late as or later than the long-necked giraffes and living contemporaneously with them for millions of years."[319]

"The [Giraffid] genera arise geologically abruptly followed by an enormous stasis/constancy. This is in utter contrast to the predictions of gradualism. . . . [The tree] is not even a bush: the main types and subtypes appear independently of each other."[320]

"The evidence for evolution would have to consist of 'real links', not just bridges of thought created

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[315] Casey Luskin, "Finding Intelligent Design in Nature in H. Wayne House, ed., *Intelligent Design 101: Leading Experts Explain the Key Issues* (Grand Rapids, MI: Kregel Publications, 2008), 98–99.

[316] Reinhard Junker, "Fossile Arten als Vorstufen und Bindeglieder?," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 276. Quoted passage translated from German.

[317] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 369n765; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[318] Wolf-Ekkehard Lönnig, *The Evolution of the Long-Necked Giraffe (Giraffa camelopardalis L.): What Do We Really Know? Testing the Theories of Gradualism, Macromutation, and Intelligent Design* (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2011), 25 [PDF p. 37]; digital file, https://ad-multimedia.de/evo/long-necked-giraffe_mU.pdf : accessed 4 November 2025.

[319] Wolf-Ekkehard Lönnig, *The Evolution of the Long-Necked Giraffe (Giraffa camelopardalis L.): What Do We Really Know? Testing the Theories of Gradualism, Macromutation, and Intelligent Design* (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2011), 24 [PDF p. 36]; digital file, https://ad-multimedia.de/evo/long-necked-giraffe_mU.pdf : accessed 4 November 2025.

[320] Wolf-Ekkehard Lönnig, *The Giraffe Fossil Record: Or Why "A True Evolutionary Story Is Not Available": Several New Points as Well as Applications of Basic Observations from My Earlier Articles* (self-published, Preliminary Version 4 and 13 November 2025), 11; digital file, https://www.weloennig.de/GiraffeFossilRecord.1abc.pdf : accessed 15 November 2025.

with the help of mosaic shapes. ***Bridges of thought that presuppose the unproven theory to be 'indisputably' correct are <u>not proofs</u>!***"[321]

Dembski & Wells: "There are three fundamental problems with . . . examples of inferring Darwinian evolution on the basis of fossil evidence. The first is that any specific hypothesis must use the fossil data selectively; the second is that similarities in fossil or living organisms may not be due to common ancestry; and the third is that fossils cannot, in principle, establish biological relationships."[322]

Wells: "According to Henry Gee, chief science writer for *Nature*, 'the intervals of time that separate fossils are so huge that we cannot say anything definite about their possible connection through ancestry and descent.'"[323]

Remine: "Since evolutionists cannot identify phylogeny from the morphological data, they traditionally used the fossil sequence itself to identify ancestors. This led to circular reasoning and to faulty claims that all fossils are in-sequence."[324]

Lönnig: "Evolutionists simply presuppose, surmise, assume their doubtful theory as being true and then interpret everything within that evolutionary box"[325]

Davis & Kenyon: "There is always a high risk in reasoning from an unestablished assumption, no matter how logical that reasoning is."[326]

Hunter: "If we pick and choose from the abundant pool of available fossils to synthesize a sequence, we may be creating our own reality instead of reconstructing the true history of life."[327]

Lönnig: "I, for my part, am more interested in real-historical events on our earth."[328]

Remine: "Fossils are frequently displayed as a lineage, even though they are not chronologically successive in time."[329]

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[321] Wolf-Ekkehard Lönnig, correspondence to Mr. Q (pseudonym), 15 November 1998, published in "4) Gregor Mendel, Archaeopteryx und die Giraffe," in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/Giraffe.html : accessed 4 November 2025. Quoted passage translated from German.

[322] William A. Dembski and Jonathan Wells, *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), 86.

[323] Jonathan Wells, "Inherit the Spin," *Icons of Evolution*, January 15, 2002, https://iconsofevolution.com/inherit-the-spin/ : accessed 11 November 2025.

[324] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 461.

[325] Wolf-Ekkehard Lönnig, *Origin and Evolution of the Rhinos (Family Rhinocerotidae): What Do We Really Know? Applying Our Previous Tests for Gradualism, Punctuated Equilibrium and Intelligent Design Now Also on the Rhinos* (Preliminary Internet version, 5 May 2023; revised thereafter), 15; digital file, https://www.weloennig.de/Rhinoceros.pdf : accessed 10 November 2025

[326] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 133.

[327] Cornelius G. Hunter, *Darwin's God: Evolution and the Problem of Evil* (Grand Rapids, Mich.: Brazos Press, 2001), 77.

[328] Wolf-Ekkehard Lönnig, "Nachträge zu Seite 402 (Molekulare Uhr)," in "D. Cytochrom C und Stammbaumhypothesen," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesV1.1.Cyto.html : accessed 3 November 2025. Quoted passage translated from German. Lönnig did not write this passage in the context of the fossil record.

[329] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 409.

Lönnig: "Using evolutionary assumptions, one can almost always postulate a line of descent out of a large variety of forms."[330]

"Almost anything can be arranged in a morphological sequence."[331]

Wells: "We all know that automobiles are manufactured according to archetypes (in this case, plans drawn up by engineers), so it is clear that there can be other explanations for a sequence of similarities besides descent with modification."[332]

Sewell: "If some future paleontologist were to unearth two species of Volkswagens, he might find it plausible that one evolved gradually from the other. He might find the lack of gradual transitions between automobile families more problematic, for example, in the transition from mechanical to hydraulic brake systems, or from manual to automatic transmissions, or from steam engines to internal combustion engines; though if he thought about what gradual transitions would look like, he would understand why they didn't exist. He would be even more puzzled by the huge differences between the bicycle and motor vehicle phyla, or between the boat and airplane phyla. But heaven help us when he uncovers motorcycles and Hovercraft. The discovery of these 'missing links' would be hailed in all newspapers as final proof that all forms of transportation arose gradually from a common ancestor, without design."[333]

Luskin: "Most often, it is only when new supposed missing links are touted to the public that the evolutionary biology community admits how little evidence it previously held for the evolutionary transition in question."[334]

Meyer, Nelson, Moneymaker, Minnich, & Seelke: "Darwin himself said that the pattern of abrupt appearance (his own term), 'may be truly urged as a valid argument' against his theory of Common Descent."[335]

"Many palaeontologists are well aware of the conflict between the fossil record and neo-Darwinian theory."[336]

Ross, Meyer, Chien, & Nelson: "In a seminal paper titled 'Interpreting Great Developmental Experiments: The Fossil Record' . . . , paleontologists J. W. Valentine and D. H. Erwin question the

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[330] Wolf-Ekkehard Lönnig, *The Evolution of the Long-Necked Giraffe (Giraffa camelopardalis L.): What Do We Really Know? Testing the Theories of Gradualism, Macromutation, and Intelligent Design* (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2011), 38 [PDF p. 50]; digital file, https://ad-multimedia.de/evo/long-necked-giraffe_mU.pdf : accessed on 28 March 2025.

[331] Wolf-Ekkehard Lönnig, *Elephant Evolution: What Do We Really Know? Another Test for Gradualism, Punctuated Equilibrium, and Intelligent Design*, self-published digital file, 4 February 2019 (corrections 10 February 2019; photographs in supplement 19 February 2019), 51; digital file, https://www.weloennig.de/ElephantEvolution.pdf : accessed 11 November 2025.

[332] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 68.

[333] Granville Sewell, "Two Reasons Darwinism Survives," *Science and Culture Today*, 2 February 2014, https://scienceandculture.com/2014/02/two_reasons_dar/ : accessed 29 October 2025.

[334] Casey Luskin, "Finding Intelligent Design in Nature," in H. Wayne House, ed., *Intelligent Design 101: Leading Experts Explain the Key Issues* (Grand Rapids, MI: Kregel Publications, 2008), 100.

[335] Stephen C. Meyer, Paul A. Nelson, Jonathan Moneymaker, Scott Minnich, and Ralph Seelke, *Explore Evolution: The Arguments for and Against Neo-Darwinism*, 1st UK ed. (Melbourne and London: Hill House Publishers, 2009), 26.

[336] Stephen C. Meyer, Paul A. Nelson, Jonathan Moneymaker, Scott Minnich, and Ralph Seelke, *Explore Evolution: The Arguments for and Against Neo-Darwinism*, 1st UK ed. (Melbourne and London: Hill House Publishers, 2009), 31–32.

sufficiency of both evolutionary models [neo-Darwinism and punctuated equilibrium] as explanations for the origin of body plans and higher-level taxa."[337]

Sandico: "Increasingly, evolutionary biologists acknowledge — in the peer-reviewed literature — that there are serious problems with the modern Darwinian synthesis. The decorated Cambrian paleontologist Simon Conway Morris calls this 'Darwin fatigue.' According to Conway Morris, the unresolved problems exposed by the Cambrian Explosion have 'opened the way to a post-Darwinian world.'"[338]

Chien: "Since Darwin's time the fossil record has stubbornly refused to confirm his prediction. Instead, as we have discovered more—including the remarkable fossils sites in China and Canada testifying to the astonishing diversity and suddenness of the Cambrian explosion—matters have only gotten worse for Darwin's story."[339]

Bechly: "Even though the terminal period of the Precambrian, called Ediacaran, features the earliest known macro-fossils of remarkably complex biota, their affinity with the later Cambrian animal phyla has been rejected or is at least highly controversial even within mainstream evolutionary biology."[340]

Lönnig: "***What is certain is that, according to the present state of knowledge, the moon has nothing to do with white cheese, just as the Precambrian has nothing to do with evolution!***"[341]

Bechly: "With increasing paleontological research and better knowledge of the Proterozoic fossil record, the Cambrian explosion has turned out to be even more abrupt than was previously thought. . . . If a problem does not dissolve with increasing knowledge but only gets worse over time, it is a good indicator that this problem is very real. Darwinists have to face the fact that a core prediction of their theory miserably failed an important empirical test."[342]

Chien: "That the Cambrian explosion was a real event is the mainstream view of Cambrian paleontologists."[343]

Bechly: "I . . . established in my articles with numerous quotes from up-to-date peer-reviewed scientific literature that there is no reasonable doubt about the reality of the Cambrian Explosion and its status as a fatal problem for Darwinism."[344]

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[337] Stephen C. Meyer, Marcus Ross, Paul Nelson, and Paul Chien, *The Cambrian Explosion: Biology's Big Bang* (hosted by Discovery Institute, n.d.), 342 [PDF p. 20], https://www.discovery.org/m/2019/04/Darwin-Cambrian-Explosion.pdf : accessed 29 October 2025.

[338] Emily Sandico, "Why Evolutionary Biologists Are 'Fatigued' by Darwin," *Science and Culture Today*, 26 October 2023, https://scienceandculture.com/2023/10/why-evolutionary-biologists-are-fatigued-by-darwin/ : accessed 29 October 2025.

[339] Paul K. Chien, *Biology's Big Bang: The Cambrian Explosion* (Seattle: Discovery Institute Press, 2024), 29.

[340] Günter Bechly, "Fossil Friday: New Study Challenges the Artifact Hypothesis," *Science and Culture Today*, 20 October 2023, https://scienceandculture.com/2023/10/fossil-friday-new-study-challenges-the-artifact-hypothesis/ : accessed 29 October 2025.

[341] Wolf-Ekkehard Lönnig, *Reply to My Critics*, https://www.weloennig.de/Antwort_an_Kritiker.html : accessed 15 November 2025. Quoted passage translated from German.

[342] Günter Bechly, "The Demise of the Artifact Hypothesis Aggravates the Problem of the Cambrian Explosion," *Science and Culture Today*, 6 July 2020, https://scienceandculture.com/2020/07/demise-of-the-artifact-hypothesis-aggravates-the-problem-of-the-cambrian-explosion/ : accessed 29 October 2025.

[343] Paul K. Chien, *Biology's Big Bang: The Cambrian Explosion* (Seattle: Discovery Institute Press, 2024), 29.

[344] Günter Bechly, "Fossil Friday: Did the Cambrian Explosion Really Happen?" *Science and Culture Today*, 11 August 2023, https://scienceandculture.com/2023/08/fossil-friday-did-the-cambrian-explosion-really-happen/ : accessed 29 October 2025.

Section 10

10.1 Dialogue in *Reason in the Balance*:

Juanita: I don't understand the bit about the fossil record.

Winnie: A big problem for the creationists even in Darwin's day was the evidence from fossils. The creationist theory required all species to have been created at once. But what the fossil record showed is that there were creatures deeper in the rocks—so, from an earlier time—which were different and quite a bit simpler than those further up the rocks. And, very importantly, the remains of humans didn't show up until quite high in the fossil record. Most of the earlier fossils also were not like anything currently living, so they were species that had come and gone. In Darwin's time, no one knew how very old the Earth was. But thanks to Hutton and the theory of sedimentation, which you were just reading about, Juanita, many people realized that the Earth must be at least millions of years old. So it seemed that there would have been enough time for these species to change and to come and go. The creationist theory can't explain the fossil record, but Darwin can.[345]

10.2 Extended Dialogue

10.2.1 The Age of the Earth and Misconceptions About Creationism

Behe: "Ironically, we have come full circle from Darwin's day. When Darwin first proposed his theory a big difficulty was the estimated age of the earth. Nineteenth-century physicists thought the earth was only about a hundred million years old, yet Darwin thought natural selection would require much more time to produce life. At first he was proven right; the earth is now known to be much older. With the discovery of the biological Big Bang, however, the window of time for life to go from simple to complex has shrunk to much less than nineteenth-century estimates of the earth's age."[346]

Campbell: "The very idea that the debate over 'evolution' is between Darwin's theory and a young earth, six day creation model is itself an artifact of the polemics of the evolution controversy. It is true that there are today vigorous advocates of a 'young earth' creationism. But, this is not the only, and certainly not the most philosophically sophisticated, version of 'creationism.'"[347]

Lönnig: "If one looks closely at the account in Genesis, one quickly realizes that from Genesis 1, verse

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[345] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 312.
[346] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 28.
[347] John Angus Campbell, "John Stuart Mill, Charles Darwin, and the Culture Wars," *Discovery Institute*, 1 April 1996, https://www.discovery.org/a/125/ : accessed 29 October 2025.

5 to chapter 2, verse 4 alone, *three different meanings of* **day** (Hebrew yom) are used."[348]

"The dogmatic commitment to 24-hour creation days has led many laypeople and scholars to reject the biblical account as implausible from the outset, so that this unnecessary commitment blocks the path to the gospel for many people from the outset."[349]

Luskin: "The vast majority of leaders in the ID movement are not young earth creationists."[350]

Lönnig: "My work ***does not*** result from the creationism debate coming from the USA. . . . As a student – I studied from 1965-1971 – I studied the 1300-page evolution-critical work SYNTHETIC ARTBILDUNG by Heribert **Nilsson** (geneticist and professor of botany at the University of Lund in Sweden), published in 1953, so thoroughly that I knew many passages by heart. As far as I know, the work was published without religious aim and without religious background by the large Swedish (scientific) publisher Gleerups and had previously been supported by natural science funds. The work does not contain any discussion of religious questions.

"At that time, there was no talk of American creationism in Europe.

"As a second scientific work – also religiously neutral – I have studied the work THE TRANSFORMIST ILLUSION (1957) by the English zoologist Douglas **Dewar** just as thoroughly. During my studies, I collected all kinds of (and impossible) works on this question, whereby German-language authors in particular impressed me more, such as the biological works by Hedwig Conrad-Martius (1947), Oskar Kuhn (1950) and Robert Nachtwey (1959), which were published by Catholic publishers but were rather reserved in religious questions. (For the most part, the writings are as restrained in religious matters as, for example, today's biological works from the Herder publishing house.) Of course, one could object that the doctrine of descent is itself a religious question. But from this point of view, all neo-Darwinist contributions also fall under this rubric.

"All of these studies date from 'pre-creationist' times. When the first treatises and writings of creationism were later published in Germany, I also included these (as well as the American literature) in my study program – by the way, quite critically."[351]

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[348] Wolf-Ekkehard Lönnig, correspondence to Mr. AB (pseudonym), 29 December 1999, published as *Schöpfungstage: Ein paar nach wie vor hochaktuelle Punkte zur Frage nach der Länge der Genesis-Schöpfungstage* (self-published, 7 December 2007), 2; digital file, https://www.weloennig.de/Schoepfungstage.pdf : accessed 11 November 2025. Quoted passage translated from German.

[349] Wolf-Ekkehard Lönnig, correspondence to Mr. AB (pseudonym), 29 December 1999, published as *Schöpfungstage: Ein paar nach wie vor hochaktuelle Punkte zur Frage nach der Länge der Genesis-Schöpfungstage* (self-published, 7 December 2007), 3; digital file, https://www.weloennig.de/Schoepfungstage.pdf : accessed 11 November 2025. Quoted passage translated from German.

[350] Casey Luskin, "A Partisan Affair: A Response to Edward Humes' Inaccurate History of **Kitzmiller v. Dover** and Intelligent Design, *'**Monkey Girl**'*," *Discovery Institute*, 26 December 2008, https://www.discovery.org/a/9471/ : accessed 29 October 2025.

[351] Wolf-Ekkehard Lönnig, correspondence to Prof. D. (pseudonym), 26 August 1994, published in "5) Ist die Variabilität der Frucht-Verbreitungsmechanismen von Scabiosa für die Entstehung der Utricularia-Falle relevant?" in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/Scabiosa.html : accessed 4 November 2025. Quoted passage translated from German.

10.2.2 The Fossil Record and the Pattern of Increasing Complexity

Joshua: That human remains don't show up until late in the fossil record is consistent with the sequence of creation recorded in the Bible.

Laufmann & Glicksman: "Earth's population of living forms has progressed from simpler to more complex over the history of life. Many attribute this to an unguided evolutionary process, but given the impassable [causal] hurdles facing blind evolution in constructing the coherent and interdependent systems of systems necessary to life at every level, other possibilities should be considered. Could this progression be so that earlier, simpler forms prepare the environment for the more complex later forms? Maybe organisms shape the environment more than the environment shapes the organisms. Could the simpler organisms be the designer-engineer's means for terraforming the planet—for instance, to establish the oxygen levels needed for later creatures, including humans?"[352]

Joshua: It would probably be more accurate to say that life's history has gone from complex to more complex.

Rammerstorfer: "We know today . . . that life is incredibly complex even at the level of the 'simplest' cells."[353]

G. Kemper, H. Kemper, & Luskin: "The complexity of even the most basic living cell poses great difficulty for materialistic explanations and points strongly towards design."[354]

Dembski & Wells: "Darwinism, in itself, does not mandate increasing complexity and inherently favors simplicity. . . . Increased complexity invariably incurs a fitness cost."[355]

Hedin: "The history of life on Earth shows a trend towards greater complexity, functionality, and diversity, in stark contrast to the general trend of nature. . . .

". . . Living systems represent quantum jumps in the increase of functional complexity. Science has already shown that nature is incapable of bringing this about without an intelligent mind serving as the source of the information associated with increasing specified complexity."[356]

Wells: "Throughout 150 years of the science of bacteriology, there is no evidence that one species of bacteria has changed into another… Since there is no evidence for species changes between the simplest forms of unicellular life, it is not surprising that there is no evidence for evolution from prokaryotic [e.g., bacterial] to eukaryotic [e.g., plant and animal] cells."[357]

Lönnig: "There is not a single example of the emergence of completely new genes and enzymes to

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[352] Steve Laufmann and Howard Glicksman, *Your Designed Body* (Seattle: Discovery Institute Press, 2022), 393–394.
[353] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 32. Quoted passage translated from German.
[354] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 80.
[355] William A. Dembski and Jonathan Wells, *How to Be an Intellectually Fulfilled Atheist (Or Not)*, 3rd ed. (Dallas, TX: Foundation for Thought and Ethics, 2015), 110n9.
[356] Eric Hedin, "Theory of Increasing Complexity Fails the Test of Science," *Science and Culture Today*, 8 April 2025, https://scienceandculture.com/2025/04/theory-of-increasing-complexity-fails-the-test-of-science/ : accessed 29 October 2025.
[357] Jonathan Wells, *The Myth of Junk DNA* (Seattle: Discovery Institute Press, 2011), 12.

explain the mutative antibiotic resistance [in bacteria].”[358]

“The mutation-related resistance phenomena are usually due to LOSS MUTATIONS.”[359]

[358] Wolf-Ekkehard Lönnig, correspondence to Dr. V. (pseudonym), 28 February 2001, published in Wolf-Ekkehard Lönnig, *Diskussion von Einwänden zu dem Artikel „Hoimar von Ditfurth und der Lederbergsche Stempelversuch: Sind Antibiotikaresistenzen ein Beweis für die Makroevolution im Labor?“*, https://www.weloennig.de/Bakterienresistenzen.html : accessed 17 November 2025. Quoted passage translated from German.

[359] Wolf-Ekkehard Lönnig, correspondence to Dr. V. (pseudonym), 27 February 2001, published in Wolf-Ekkehard Lönnig, *Diskussion von Einwänden zu dem Artikel „Hoimar von Ditfurth und der Lederbergsche Stempelversuch: Sind Antibiotikaresistenzen ein Beweis für die Makroevolution im Labor?“*, https://www.weloennig.de/Bakterienresistenzen.html : accessed 17 November 2025. Quoted passage translated from German.

Section 11

11.1 Dialogue in *Reason in the Balance*:

Stephen: Of course, I know a bit about Genesis. Not that I believe that it's literally true. I am more in favor of a view called "intelligent design," which is much more scientific. My view is simply that you can't explain the existence of the natural world merely by an appeal to evolution and natural selection. It's just too amazing. Lots of scientists agree with that as well. For instance, Michael Behe, as well as others, argues that at least some parts of the world are just too intricate and complex to be simply the result of chance and natural selection. It's not plausible that complex creatures like ourselves could have been produced by this slow, incremental process.

Winnie: Again, Darwin saw these objections coming. Let me read to you from Chapter 6, which Darwin called "Objections." You'll see how Darwin uses argument to the best explanation. He shows that he sees all the objections to this theory, and then he replies to each one.

> *LONG before having arrived at this part of my work, a crowd of difficulties will have occurred to the reader Some of them are so grave that to this day I can never reflect on them without being staggered; but, to the best of my judgment, the greater number are only apparent, and those that are real are not, I think, fatal to my theory.*
>
> *These difficulties and objections may be classed under the following heads: Firstly, why, if species have descended from other species by insensibly fine gradations, do we not everywhere see innumerable transitional forms? Why is not all nature in confusion instead of the species being, as we see them, well defined?*
>
> *Secondly, is it possible that an animal having, for instance, the structure and habits of a bat, could have been formed by the modification of some animal with wholly different habits? Can we believe that natural selection could produce, on the one hand, organs of trifling importance, such as the tail of a giraffe, which serves as a fly-flapper, and, on the other hand, organs of such wonderful structure, as the eye, of which we hardly as yet fully understand the inimitable perfection?*
>
> *Thirdly, can instincts be acquired and modified through natural selection? What shall we say to so marvellous an instinct as that which leads the bee to make cells, which have practically anticipated the discoveries of profound mathematicians?*
>
> *Fourthly, how can we account for species, when crossed, being sterile and producing sterile offspring, whereas, when varieties are crossed, their fertility is unimpaired?*
>
> Organs of extreme perfection and complication. *To suppose that the eye, with all its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light, and for the correction of spherical and chromatic aberration, could have been formed by natural selection, seems, I freely confess, absurd in the highest possible degree. Yet reason tells me, that if numerous gradations from a perfect and complex eye to one very imperfect and simple, each grade being useful to its possessor, can be shown to exist; if further, the eye does vary ever so*

> *slightly, and the variations be inherited, which is certainly the case; and if any variation or modification in the organ be ever useful to an animal under changing conditions of life, then the difficulty of believing that a perfect and complex eye could be formed by natural selection, though insuperable by our imagination, can hardly be considered real. How a nerve comes to be sensitive to light, hardly concerns us more than how life itself first originated; but I may remark that several facts make me suspect that any sensitive nerve may be rendered sensitive to light, and likewise to those coarser vibrations of the air which produce sound.*[360]

11.2 Extended Dialogue

11.2.1 Darwin's Explanation of the Eye and the Modern Critique

Hunter: "Here Darwin lays out the form of the preadaptation argument. What is needed, according to Darwin, is a *conceivable* sequence. If evolutionists, by thought experiment, can conjure up any sequence that shows a potential usefulness at each stage, then the problem is solved. We need not pursue what *likely* happened; what *could have* happened will do."[361]

Lönnig: "Unfortunately, 'conceivable' often seems more than reality allows."[362]

Joshua: Darwin wrote in the *Origin*: "Although the belief that an organ so perfect as the eye could have been formed by natural selection, is more than enough to stagger any one; yet in the case of any organ, if we know of a long series of gradations in complexity, each good for its possessor, then, under changing conditions of life there is no logical impossibility in the acquirement of any conceivable degree of perfection through natural selection."[363]

Hunter: "The only required premise is that 'we know of a long series of gradations in complexity, each good for its possessor.' Of course, what Darwin intends here is that we simply must be able to envision such a sequence. But one can always, by thought experiment, conjure up a set of potentially useful intermediates. Thus, while it is true that there is no 'logical impossibility' to Darwin's solution, we must also say that it is not falsifiable. How could a would-be critic show that *no such sequence* exists?"[364]

Lönnig: "Providing a 'proof of impossibility' in the strict sense lies outside the scope of natural

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[360] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 312–313.
[361] Cornelius G. Hunter, *Darwin's God: Evolution and the Problem of Evil* (Grand Rapids, Mich.: Brazos Press, 2001), 74.
[362] Wolf-Ekkehard Lönnig, Appendix A–M (descriptive title), in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIAbI.html : accessed 3 November 2025. Quoted passage translated from German.
[363] Charles Darwin, *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*, 2nd ed. (London: John Murray, 1860), 204 [PDF p. 222]; digital image, https://darwin-online.org.uk/converted/pdf/1860_Origin_F376.pdf : accessed 11 November 2025.
[364] Cornelius G. Hunter, *Darwin's God: Evolution and the Problem of Evil* (Grand Rapids, Mich.: Brazos Press, 2001), 75.

science."[365]

Joshua: In *the Origin*, Darwin writes: "Reason tells me, that if numerous gradations from a simple and imperfect eye to one complex and perfect can be shown to exist, each grade being useful to its possessor, as is certainly the case; if further, the eye ever varies and the variations be inherited, as is likewise certainly the case; and if such variations should be useful to any animal under changing conditions of life, then the difficulty of believing that a perfect and complex eye could be formed by natural selection, though insuperable by our imagination, should not be considered as subversive of the theory."[366]

Lönnig: "A word about 'imagination' – last sentence of the previous Darwin quote: Here the difficulty is deliberately not seen in theory, but transferred to the imagination. The reader is therefore to be persuaded that the difficulty lies with 'us', not in theory. Without reliable evidence, this method is only a dishonest attempt at a revaluation."[367]

Thomas: "[Darwin] seeks to persuade us that the eye was not designed but somehow fell into place as the result of a myriad of chance selections over time:

> That many and serious objections may be advanced against the theory of descent with modification, I do not deny. I have endeavoured to give them their full force. Nothing at first can appear more difficult to believe than that the more complex organs and instincts should have been perfected, not by means superior to, though analogous with, human reason, but by the accumulation of innumerable slight variations, each good for the individual possessor. Nevertheless, this difficulty, though appearing to our imagination insuperably great, cannot be considered real if we admit the following propositions, namely, — that gradations in the perfection of any organ or instinct which we may consider, either do now exist or could have existed, each good of its kind, — that all organs are, in ever so slight degree, variable, — and, lastly, that there is a struggle for existence leading to the preservation of each profitable deviation of structure or instinct. The truth of these propositions cannot, I think, be disputed.

"What has Darwin said there? According to my reading he suggests that, even though you or I might find unbelievable the idea of almost unimaginably complex structures like the eye coming about by slight and undirected variations over time, the difficulty lies all in our imagination. He then points to three quite doubtful propositions as if they were self-evidently true and as a (hoped for) confirmation of his point, all in the hope that we will come round to his way of thinking. But asserting that a firmly felt instinctive reaction is mere imagination is only that, an assertion, not a demonstration; and labeling disputable points indisputable no more makes them so than praising the proverbial 'emperor's new clothes' cures his nakedness."[368]

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[365] Wolf-Ekkehard Lönnig, *Die Evolution der karnivoren Pflanzen: Was die Selektion nicht leisten kann – das Beispiel Utricularia (Wasserschlauch)*, 3rd improved edition (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2012), 106 [PDF p. 120]; digital file, https://www.weloennig.de/Utricularia2011Buch.pdf : accessed 9 December 2025. Quoted passage translated from German.

[366] Charles Darwin, *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*, 6th ed. (London: John Murray, 1876), 143–144 [PDF pp. 172–173]; digital image, https://darwin-online.org.uk/converted/pdf/1876_Origin_F401.pdf : accessed 11 November 2025.

[367] Wolf-Ekkehard Lönnig, Appendix A–M (descriptive title), in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online ed., https://www.weloennig.de/AuIAbI.html : accessed 3 November 2025.

[368] Neil Thomas, "In Darwin, the Descent of a PR Man," *Science and Culture Today*, 19 August 2021, https://scienceandculture.com/2021/08/in-darwin-the-descent-of-a-pr-man/ : accessed 29 October 2025.

Joshua: Darwin said that "[t]o arrive . . . at a just conclusion regarding the formation of the eye, with all its marvellous yet not absolutely perfect characters, it is indispensable that the reason should conquer the imagination."[369]

Lönnig: "Forgive me if I adopt a somewhat sharper tone in the following: Now Darwin has been fantasizing for three pages ('so it is not difficult for us to believe'; 'If you want to go that far, you can... also go one step further and assume,..'), refers to other parts of his work without presenting us with a single proof, simplifies, tries to avoid cliffs by omitting facts, does not see the correlation phenomenon (which was known at least since Cuvier) and now, last but not least, in the sense of the theory, 'imagination should give way to the intellect'"!

"We have the firm confidence in the reader that he will be able to see through this renewed 'attempt at re-evaluation', that he will be able to see through the evolutionary fantasy and that he will be able to recognize the evaluation: Darwin's theory = reason, - all biological facts that speak against it (co-adaptation, complexity, etc.) = fantasy, as a philosophy alien to science."[370]

"The joke of Darwin's case is that he constantly appeals to reason without being able to give reasonable reasons for it."[371]

Joshua: Darwin wrote: "In searching for the gradations through which an organ in any species has been perfected, we ought to look exclusively to its lineal progenitors; but this is scarcely ever possible, and we are forced to look to other species and genera of the same group, that is to the collateral descendants from the same parent-form, in order to see what gradations are possible, and for the chance of some gradations having been transmitted in an unaltered or little altered condition. But the state of the same organ in distinct classes may incidentally throw light on the steps by which it has been perfected."[372]

Behe: "[Darwin] pointed to modern animals with different kinds of eyes (ranging from the simple to the complex) and suggested that the evolution of the human eye might have involved similar organs as intermediates."[373]

Lönnig: "In contradiction to the selection theory is the assumption that the lateral lines have not yet been perfected to such an extent ('some gradations.. transmitted.. unaltered'), when even the slightest 'perfection' decides on death and life in the struggle for existence. The 'more imperfect' side lines should have gone down long ago. Today, however, we find the most diverse levels of differentiation of organs in the same biotope, 'descendant' next to 'ancestor', which shows that for

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[369] Charles Darwin, *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*, 6th ed. (London: John Murray, 1876), 146 [PDF pp. 175]; digital image, https://darwin-online.org.uk/converted/pdf/1876_Origin_F401.pdf : accessed 11 November 2025.

[370] Wolf-Ekkehard Lönnig, Appendix N–Z (descriptive title), in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIAbII.html : accessed 3 November 2025. Quoted passage translated from German.

[371] Wolf-Ekkehard Lönnig, "Nachträge," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIINa.html : accessed 3 November 2025. Quoted passage translated from German.

[372] Charles Darwin, *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*, 6th ed. (London: John Murray, 1876), 144 [PDF pp. 173]; digital image, https://darwin-online.org.uk/converted/pdf/1876_Origin_F401.pdf : accessed 11 November 2025.

[373] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 16.

the entire organism with its ecological niche, the given level of differentiation is perfect in each case."[374]

"A tremendous anthropomorphism runs through the entire theory of evolution, which is also expressed in the words of J. Maynard Smith . . . : '... a single light sensitive cell is better than nothing, a light-sensitive cell with a layer of pigment to one side is better still, and so on.' '... an organ that tells you whether the light is on, or where it is coming from, may be a lot better than nothing, at least if you are a flatworm.' For a tapeworm, for example, these statements are completely irrelevant, other life forms are equipped with light-sensory organs of varying complexity *according to their needs*."[375]

"If everything is in flux, if it is further developed, continuously improved, refined and perfected, i.e. if higher levels of differentiation are constantly necessary through selection, then the currently existing simpler organs of vision (regardless of the question of why they still exist today) can hardly remain at their weak and imperfect level in terms of selection theory. In time, most organisms would then have to be equipped with highly complex visual instruments, and millions of morphological species would one day have to be able to look at us with human and eagle eyes, as it were, according to 'the principle of gradual perfection from very simple beginnings,' etc."[376]

"Even a problem-free gradation, i.e. without major discontinuities due to a strong increase in complexity within the series, alone cannot prove the real genetic descent. All conceivable forms such as snow crystals, geometric figures, musical instruments, typewriters, airplanes, etc. can be arranged in continuous series with increasing complexity . . . and with the arrangement postulate the self-organization of the series of forms through purely physical laws over the intermediate stages. *However, it is the transformations themselves that need to be proven*. . . . As long as the postulated construction, evolution and transformation processes cannot be proven by mutation and selection, the evolutionary methodology is ***logically on the same level*** in the examples just mentioned and in the organisms. . . .

". . . It should be emphasized that neither the arrangement of the different eye types in the direction of increasing complexity nor as a series of decreasing **degrees of** differentiation alone can be conclusive for a particular mode of origin and their descent from each other. However, real genetic and reproducible ancestry in such series has so far only been known in the direction of decreasing complexity."[377]

Wells: "WHAT DARWIN'S theory needs is not a range of eyes that exists in the present, but a range

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[374] Wolf-Ekkehard Lönnig, Appendix A–M (descriptive title), in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online ed., https://www.weloennig.de/AuIAbI.html : accessed 3 November 2025. Quoted passage translated from German.

[375] Wolf-Ekkehard Lönnig, "Neuere Behauptungen," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIINeBe.html : accessed 3 November 2025. J. Maynard Smith quotation in English; Wolf-Ekkehard Lönnig's commentary translated from German. Underlining by Wolf-Ekkehard Lönnig.

[376] Wolf-Ekkehard Lönnig, "Neuere evolutionistische Abhandlungen – L. v. Salvini-Plawen und Ernst Mayr: On the Evolution of Photoreceptors and Eyes (1977))," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIINeAb.html : accessed 3 November 2025. Quoted passage translated from German.

[377] Wolf-Ekkehard Lönnig, "III. Morphologische Serie bei den Polychaeta:," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIIMoIII.html : accessed 3 November 2025. Quoted passage translated from German.

over the history of life: Not a horizontal slice of time, but a vertical one. If the eyes of early animals started out 'very imperfect and simple,' and eyes in some phyla gradually became more perfect and complex in the course of geological time, *that* might constitute evidence for Darwin's theory.

"But complex eyes were already present in some of the earliest animals."[378]

Chien: "There is little doubt that both invertebrate compound eyes and vertebrate camera eyes were already well developed early in the Cambrian era."[379]

G. Kemper, H. Kemper, & Luskin: "Even 'simple' eyespots are complex."[380]

Dembski: "Slapping down eyes of varying complexity on a chart and then drawing arrows from less complex to more complex eyes to signify evolutionary relationships does nothing to explain how increasingly complex eyes emerged. The gaps between these increasingly complex eyes become unbridgeable chasms once you begin to think like an engineer and actually look at the astonishing and irreducibly complex components. To be sure, one can spin a Darwinian tale about how eyes of increasing complexity conferred an advantage in fitness on the organisms that possess them and thus led to the evolution of the mammalian eye. But there's nothing here that you can take to an engineer and use to build an actual eye."[381]

Lönnig: "With the series of different levels of differentiation, the developmental theoretical transformations are implied in a completely naïve and unscientific way and suggested as real historical processes – without even addressing the questions of probability and reproducibility of **the events** postulated by mutation and selection."[382]

Dembski: "Explanations by definition are supposed to clarify and elucidate, engender understanding, and yield practical know-how. Darwinian explanations, like those of the eye, do nothing like this. They are just-so stories."[383]

Wells: "An imaginative story is not empirical science."[384]

Rammerstorfer: "Evolutionary theorists . . . regularly accuse their opponents of a lack of imagination when they argue that various biological systems cannot be explained by the usual mechanisms of

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[378] Jonathan Wells, *Zombie Science: More Icons of Evolution*, Kindle edition (Seattle: Discovery Institute Press, 2017), 132–133. Page numbers reflect the Kindle edition mapped to ISBN 1936599449 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "what Darwin's"; for print readers, the page range provides approximate placement.

[379] Paul K. Chien, *Biology's Big Bang: The Cambrian Explosion* (Seattle: Discovery Institute Press, 2024), 14.

[380] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 120.

[381] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 217.

[382] Wolf-Ekkehard Lönnig, "Neuere evolutionistische Abhandlungen – L. v. Salvini-Plawen und Ernst Mayr: On the Evolution of Photoreceptors and Eyes (1977)," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIINeAb.html : accessed 3 November 2025. Quoted passage translated from German.

[383] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 217.

[384] Jonathan Wells, *Zombie Science: More Icons of Evolution*, Kindle edition (Seattle: Discovery Institute Press, 2017), 114. Page number reflects the Kindle edition mapped to ISBN 1936599449 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "an imaginative"; for print readers, the page provides approximate placement.

evolution."[385]

Lönnig: "I can imagine how an elephant is derived from a dog: the dog's nose becomes longer and more flexible, the dog's ears become immensely larger (many breeds already have floppy ears), the legs become thicker and columnar and accordingly the whole body becomes larger, etc. etc. – but would that still be science?"[386]

Remine: "The evolution debate is not about a poverty of imagination. It is about poverty of demonstration."[387]

Behe: "All sciences begin with speculation; only Darwinism routinely ends with it."[388]

Dembski and Wells: "Note that arguments from imagination do not become scientific by giving them a veneer of technical sophistication. For instance, computer simulations are widely supposed to have shown how the vertebrate eye could have evolved by Darwinian processes. The principal work cited to prove this point is that of Dan-E. Nilsson and Susanne Pelger. But in fact, Nilsson and Pelger never performed a computer simulation of the eye's evolution. Rather, they made some loose calculations based on questionable mathematical models concerning the number of steps it would take for light sensitive cells to arrange themselves into the shape of a sphere (thus resembling an eyeball). . . .

"Bottom line: Arguments from imagination, whatever form they take, do not constitute scientific evidence and are useless for deciding whether complex structures evolved by Darwinian processes."[389]

Luskin: "Seeing requires circuitry or some kind of a visual processing pathway to interpret the signal and trigger the appropriate response. That's the problem with evolving vision — you can't just have the photon collectors. You need the photon collectors, the visual processing system, and the response-triggering system. At the very least three systems are required for vision to give you a selective advantage. It would be prohibitively unlikely for such a set of complex coordinated systems to evolve by stepwise mutations and natural selection."[390]

Berlinski: "The very problem that Darwin's theory was designed to evade now reappears. Like vibrations passing through a spider's web, changes to any part of the eye, if they are to improve vision, must bring about changes throughout the optical system. Without a correlative increase in the size and complexity of the optic nerve, an increase in the number of photoreceptive membranes can have no effect. A change in the optic nerve must in turn induce corresponding neurological changes in the brain. If these changes come about simultaneously, it makes no sense to talk of a gradual ascent of Mount Improbable. If they do not come about simultaneously, it is not clear why they should come

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[385] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 60. Quoted passage translated from German.

[386] Wolf-Ekkehard Lönnig, *Die Evolution der karnivoren Pflanzen: Was die Selektion nicht leisten kann – das Beispiel Utricularia (Wasserschlauch)*, 3rd improved edition (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2012), 90n148 [PDF p. 104]; digital file, https://www.weloennig.de/Utricularia2011Buch.pdf : accessed 9 December 2025. Quoted passage translated from German.

[387] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 318.

[388] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 268.

[389] Jonathan Wells and William A. Dembski, "General Notes," in *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), CD-ROM, 53.

[390] Casey Luskin, "More Implausible Stories About Eye Evolution," *Science and Culture Today*, 8 April 2022, https://scienceandculture.com/2022/04/more-implausible-stories-about-eye-evolution/ : accessed 29 October 2025.

about at all."[391]

Lönnig: "When dealing with problems in textbooks and discussions, the followers of neo-Darwinism frequently remain silent on the subject of co-adaptation, - the problem that presents its greatest difficulty. – Because its method of explanation can only be applied linearly and not to a network of hundreds of anatomical structures and their physiological functions which are precisely attuned to one another, the principles of neo-Darwinism have proved completely unsatisfactory in relation to the co-adaptation problem. – The co-adaptation problem requires that many random mutations on a whole chain of different genetic sites . . . , e.g. the numerous structures in the eye, optical nerve, optic chiasm, brain, muscles etc. have to operate in a precisely defined direction simultaneously and all working to the same end. We find here multiple co-adaptation: on the one hand at the inner and outer structures of the eye itself, then the interaction between eye and brain, together with the eye-muscles with the control-centre in the mid-brain (mesencephalon) and finally with the various centres for regulation and integration in the brain with their correlations to the organism and its environment."[392]

"The evolutionist of today must omit most of the complex eye structures and -synorganizations of vertebrates in order to persuade their followers in the absence of scientific facts."[393]

Wells: "The claim that eyes can evolve easily is not based on empirical science."[394]

Miller: "For any species, upgrading to high-resolution vision requires massive reengineering in a single step. Such radical innovation, coordinated to achieve a distant goal, is only possible with intelligent design."[395]

Luskin: "Standard evolutionary accounts for the origin of the eye . . . lack details, ignore biochemical complexity, and in fact invoke sudden and abrupt appearance of key components of eye morphology. . . .

"Standard accounts of eye evolution fail to explain the evolution of key eye features like:

- The biochemical evolution of the fundamental ability to sense light
- The origin of the first 'light sensitive spot'
- The origin of neurological pathways to transmit the optical signal to a brain
- The origin of a behavioral response to allow the sensing of light to give some behavioral

[391] David Berlinski, "Keeping an Eye on Evolution: Richard Dawkins, a Relentless Darwinian Spear Carrier, Trips Over Mount Improbable." *Discovery Institute*, 2 November 1996, https://www.discovery.org/a/132/ : accessed 29 October 2025.
[392] Wolf-Ekkehard Lönnig, "English Summary (Facts and Polemics)," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIEng.html : accessed 3 November 2025.
[393] Wolf-Ekkehard Lönnig, "III. Morphologische Serie bei den Polychaeta:," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIIMoIII.html : accessed 3 November 2025. Quoted passage translated from German.
[394] Jonathan Wells, *Zombie Science: More Icons of Evolution*, Kindle edition (Seattle: Discovery Institute Press, 2017), 142. Page number reflects the Kindle edition mapped to ISBN 1936599449 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "clearly the claim"; for print readers, the page provides approximate placement.
[395] Brian Miller, "Eye Evolution: A Closer Look," *Science and Culture Today*, 13 February 2017, https://scienceandculture.com/2017/02/eye_evolution_a/ : accessed 29 October 2025.

advantage to the organism

- The origin of the lens, cornea and iris in vertebrates
- The origin of the compound eye in arthropods

At most, accounts of the evolution of the eye provide a stepwise explanation of 'fine gradations' for the origin of more or less one single feature: the increased concavity of eye shape."[396]

Behe: "Darwin wrote in *The Origin of the Species*, 'How a nerve comes to be sensitive to light hardly concerns us more than how life itself originated.'"[397]

"Let us now look at that question that Darwin was not able to address, asking what modern science can contribute to the discussion of what makes a light-sensitive spot. What happens when a photon of light first registers on the retina?

"Light striking the retina, it interacts with a small, organic molecule called 11-cis-retinal that is similar to a bent molecule. . . . When light hits this molecule, it isomerizes, snaps out, and turns into a linear molecule called trans-retinal. . . .

"This is the switch that . . . sets in motion a chain of events that results in vision. . . . The retinal is actually bound to a protein called rhodopsin. The retinal is about a third of the length of this molecule, rhodopsin. Retinal changes forces the shape of the rhodopsin to alter, which then gets bound. When that happens, the change in the shape of the rhodopsin exposes a site, which allows it to interact with another protein molecule that is called 75ransducing. So, rhodopsin and 75ransducing interact with each other. When that happens, another binding site is exposed, allowing the rhodopsin-transducin complex to interact with another molecule called phosphodiesterase. This phosphodiesterase molecule is an enzyme that acts as a chemical scissors, turning a molecule cyclic GMP into something called 5'-GMP. In the cell, there is a lot of cyclic GMP. Some of it binds to a protein called an ion channel . . . , which normally allows calcium ions into the cell, and it normally binds cyclic GMP. But when the phosphodiesterase cuts the cyclic GMP in the cell, the cyclic G, which is attached onto the ion channel, falls off. That changes the shape of the ion channel. The channel shuts down, calcium ions can no longer enter the cell, and the voltage across the cell membrane changes. A signal is sent down the optic nerve to the brain. The interpretation by the brain is vision.

"This is Darwin's simple light-sensitive spot. . . . Many more processes than this are necessary for this system to work. . . . What Darwin and his contemporaries hoped to be simple starting points have turned out to be considerably more complex than anyone in the nineteenth century could have imagined."[398]

"The relevant steps in biological processes occur ultimately at the molecular level, so a satisfactory explanation of a biological phenomenon such as vision, or digestion, or immunity must include its molecular explanation.

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[396] Casey Luskin, "Response to the NCSE's Reply to *Explore Evolution* on Natural Selection," *Explore Evolution*, 2 March 2010, https://exploreevolution.com/2010/03/02/response_to_the_ncses_reply_to/ : 7 November 2025.

[397] Michael J. Behe, "Darwin's Black Box: Is Irreducible Complexity Still a Conundrum for Darwinism?" in H. Wayne House, ed., *Intelligent Design 101: Leading Experts Explain the Key* Issues (Grand Rapids, MI: Kregel Publications, 2008), 118.

[398] Michael J. Behe, "Darwin's Black Box: Is Irreducible Complexity Still a Conundrum for Darwinism?" in H. Wayne House, ed., *Intelligent Design 101: Leading Experts Explain the Key* Issues (Grand Rapids, MI: Kregel Publications, 2008), 119–120.

"Now that the black box of vision has been opened, it is no longer enough for an 'evolutionary explanation' of that power to consider only the anatomical structures of whole eyes, as Darwin did in the nineteenth century, and as popularizers of evolution continue to do today. Each of the anatomical steps and structures that Darwin thought were so simple actually involves staggeringly complicated biochemical processes that cannot be papered over with rhetoric."[399]

[399] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 23. Page number reflects the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "relevant steps"; for print readers, the page number provides approximate placement.

Section 12

Section 12.1 Authors of *Reason in the Balance*

Bailin & Battersby: "Problems and anomalies that cannot currently be explained by a theory are not sufficient to show that a theory should be rejected or that another explanation is the best explanation. There are an enormous number of phenomena that we cannot explain. For example, we still don't have an adequate explanation of why cells become cancerous—but we would surely not want to credit this puzzle to a *bad designer*. The existence of currently inexplicable phenomena is part of the normal scientific process. There is an enormous burden of proof on anyone who wishes to reject a well-established and fruitful theory. Rejecting a theory like natural selection at this time in history would require an enormous set of conflicting observations *and* an alternative theory that had more explanatory and predictive power."[400]

Section 12.2 Extended Dialogue

12.2.1 The Burden of Proof in Evaluating Darwinian Theory

Wells: "Testing theories against the evidence never ends. . . . It doesn't matter how long a theory has been held, or how many scientists currently believe it. If contradictory evidence turns up, the theory must be reevaluated or even abandoned. Otherwise it is not science, but myth."[401]

Dembski: "Darwinism's primary myth is the myth of invincibility."[402]

Wells: "If there is such overwhelming evidence for Darwinian evolution, why do our biology textbooks, science magazines and television nature documentaries keep recycling the same tired old myths?"[403]

G. Kemper, H. Kemper, & Luskin: "The fact that these icons of evolution—finch beak sizes, moth colors, or exaggerated embryo drawings—are so weak, and yet so commonly used, should tell us something. If evolutionary biologists had better evidence, we would know about it."[404]

Dembski & Ewert: "Currently, Darwinian theory is held in such high regard among mainstream evolutionary biologists that any merits of intelligent design are simply ruled out of court. No theory is that well confirmed or deserves that kind of unmitigated acceptance. . . .

"In Bayesian terms, the prior probability of *NS* [natural selection hypothesis denoted by *NS*] is

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[400] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 313.
[401] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 2.
[402] William A. Dembski, "The Myths of Darwinism," introduction to William A. Dembski, ed., *Uncommon Dissent: Intellectuals Who Find Darwinism Unconvincing* (Wilmington, DE: ISI Books, 2004), first page of introduction.
[403] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 230.
[404] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 161

presently so large and so overwhelmingly close to 1 that any event *E* signifying the emergence of some biological system, it doesn't matter what the likelihoods *P*(*E*|*NS*) and *P*(*E*|*DS*) [design hypothesis denoted by *DS*] are because the prior probability *P*(*NS*) is so large that it swamps everything else. . . .

"It is a fact about Bayesian probability that when the prior probability of a hypothesis is sufficiently close to 1, it becomes impossible to dislodge the hypothesis. . . .

". . . The bottom line is that by making *P*(*NS*) too close to 1, we insulate *NS* from evidential challenge by *DS*. . . . Insulated in this way, *NS* functions more as a dogma than as a scientific framework open to testing and refutation."[405]

"Our task, therefore, is to give cogent grounds for lowering the prior probability of *NS* (i.e., *P*(*NS*)). Accomplishing this task is not difficult once we look past natural selection's imagined strengths, as well as the hype of its enthusiastic advocates . . . , and instead come to terms with its actual limitations, which are serious and damning."[406]

Wells: "The burden is not on critics of Darwinism to show that there are limits to natural selection. Hundreds of years of domestic breeding, and decades of laboratory and field studies on wild populations, indicate that there are such limits. The burden of proof is on Darwinists who claim that natural selection can go beyond those limits."[407]

Rammerstorfer: "Teleology in biology points to a teleological (and thus intelligent) origin. . . . The idea that teleology in biology originates from non-teleological processes has the 'obligation to provide evidence.'"[408]

"I do not argue from a defensive stance, but rather with the advantage that the '*designlike nature of the organic world*' . . . gives me."[409]

Behe: "The overwhelming appearance of design strongly affects the burden of proof: in the presence of manifest design, the onus of proof is on the one who denies the plain evidence of his eyes."[410]

"The strong appearance of design allows a disarmingly simple argument: if it looks, walks, and quacks like a duck then, absent compelling evidence to the contrary, we have warrant to conclude it's a duck. Design should not be overlooked simply because it's so obvious."[411]

Dembski: "Darwinism has a burden of proof that intelligent design does not have. Darwinism is a theory of process and therefore needs to provide convincing evidence that the processes it describes are able to bear the weight placed on them. That weight is considerable—indeed, no less than the

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[405] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 332–333.
[406] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 335.
[407] Jonathan Wells, "Misrepresenting the Gálapagos Finches," *Explore Evolution*, February 23, 2009, https://exploreevolution.com/2009/02/23/misrepresenting_the_galapagos_1/ : accessed 7 November 2025.
[408] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 44, boxed section, quoted from boxed section. Quoted passage translated from German.
[409] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 46. Quoted passage translated from German.
[410] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 265.
[411] Michael Behe, as quoted in The Center for Science and Culture, "In Monday's New York Times: The Case for Intelligent Design as a Theory for the Origin of Life," *Discovery Institute*, 7 February 2005, https://www.discovery.org/a/2414/ : accessed 29 October 2025.

whole of biological complexity and diversity. Intelligent design by contrast has a different burden. As a theory of creative innovation, its burden is to show where creative innovations first emerge and then to trace their causal antecedents and consequents."[412]

12.2.2 Paradigm Entrenchment and Methodological Immunization

Lönnig: "For [biologists committed to a materialistic world view], even the most stringent objections against the synthetic evolutionary theory are nothing but open problems that will be solved entirely within the boundaries of their theory. This is still true even when the trend is clearly running against them, that is, when the problems for the theory become greater and greater with new scientific data."[413]

Nelson: "Some unsolved problems in science have that status because more work is needed, within an otherwise stable framework. Other problems, by contrast, remain unsolved because they are predicated on false assumptions. The larger framework is collapsing. Still more effort — if conducted under those false assumptions — will be unavailing."[414]

Johnson: "Even a relatively inadequate paradigm can define a field of science and set an agenda for research, and it may take a long time for scientists to become convinced that some important problems will never be solved within the concepts of the existing paradigm."[415]

"According to Kuhn, anomalies by themselves never falsify a paradigm, because its defenders can resort to *ad hoc* hypotheses to accommodate any potentially disconfirming evidence."[416]

"That an army of researchers dedicated to finding confirmation for a paradigm has found some apparently confirming evidence here and there is not surprising. To evaluate the paradigm itself we have to consider also the mountains of negative evidence—like the absence of any pre-Cambrian fossil ancestors for the animal phyla."[417]

"As Thomas Kuhn taught us, a shaky paradigm lives on through its power to make anomalies invisible."[418]

Swift: "It is . . . increasingly evident that the theory of evolution has become so entrenched that many scientists are blinkered – seeing the facts only in the evolutionary context and reluctant to give due weight to the anomalies that arise, convinced there must be satisfactory evolutionary explanations

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[412] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 252.
[413] Wolf-Ekkehard Lönnig, *The Evolution of the Long-Necked Giraffe (Giraffa camelopardalis L.): What Do We Really Know? Testing the Theories of Gradualism, Macromutation, and Intelligent Design* (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2011), 86 [PDF p. 98]; digital file, https://ad-multimedia.de/evo/long-necked-giraffe_mU.pdf : accessed on 28 March 2025.
[414] Paul Nelson, "I Disagree with David Klinghoffer — But It's My Fault for the Confusion," *Science and Culture Today*, 21 February 2020, https://scienceandculture.com/2020/02/i-disagree-with-david-klinghoffer-but-its-my-fault-for-the-confusion/ : accessed 29 October 2025.
[415] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 121.
[416] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 122.
[417] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 208–209.
[418] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 211.

for them, which will emerge one day. They are caught up in the evolutionary paradigm."[419]

G. Kemper, H. Kemper, & Luskin: "It's not unusual for a scientist to realize that materialistic mechanisms are weak within his specialty, but then to assume that they must be valid for other areas. If everyone assumes 'someone else has figured it all out,' then a paradigm can persist through groupthink despite being full of fractures."[420]

Dembski: "According to evolutionary biology, intelligent design has only one way to succeed, namely, by showing that complex specified biological structures could not have evolved via any material mechanism. In other words, so long as some unknown material mechanism might have evolved the structure in question, intelligent design is proscribed.

"Evolutionary theory is thereby rendered immune to disconfirmation in principle because the universe of unknown material mechanisms can never be exhausted."[421]

Behe: "Logical impossibility is concerned only with self-contradictory statements (like 'he's a married bachelor') rather than with nature (like 'DNA is usually a double helix')."[422]

"Unlike in mathematics or philosophy, in science one cannot conclusively prove a negative. One can't conclusively prove that Darwinism is false any more than one can conclusively prove that the 'ether' doesn't exist. With this unfair strategy, rather than demonstrating empirical plausibility, Darwinists claim that the mere logical possibility that random mutation and natural selection may in some unknown manner account for a system counts in their favor."[423]

"In the history of science no successful theory has ever demonstrated that all rival theories are impossible, and neither should intelligent design be held to such an unreasonable, inappropriate standard. Rather, a theory succeeds by explaining the data better than competing ideas."[424]

Able: "Mere possibility is not an adequate basis for asserting scientific plausibility. Indeed, the practical need exists in science to narrow down lists of possibilities on the basis of objectively quantifiable plausibility."[425]

Koons: "Darwin himself contributed to the illicit shift in the burden of proof in his well known challenge to his critics in *The Origin*: '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.' It is, of course, impossible to 'demonstrate' any such thing. How could it be proved that something could not possibly have been formed by a process specified no more fully than

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[419] David W. Swift, *Evolution Under the Microscope: A Scientific Critique of the Theory of Evolution* (Leighton, UK: Leighton Academic Press, 2002), 152–153.
[420] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 212.
[421] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 221–222.
[422] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 258.
[423] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 484. Page number reflects the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "unlike in"; for print readers, the page number provides approximate placement.
[424] Michael J. Behe, "Whether Intelligent Design Is Science," *MichaelBehe.com*, 6 January 2005, https://michaelbehe.com/2005/01/06/whether-intelligent-design-is-science/ : accessed 11 November 2025.
[425] David L. Abel, "The Universal Plausibility Metric (UPM) & Principle (UPP)," *Theoretical Biology and Medical Modelling* 6, no. 27 (2009), https://doi.org/10.1186/1742-4682-6-27

as a process of 'numerous, successive, slight modifications'? And why should the critic have to prove any such thing? The burden is on Darwin and his defenders to demonstrate that it is really possible for at least some of the complex organs we find in nature to be formed in this way: that is, by some specific, fully articulated series of slight modifications."[426]

Bethell: "Paul Nelson . . . points out that when Darwin made his arguments, he saw no need for proof. He said, in effect: "Tell me why these minor changes should not add up, over time, to major differences." Of course, asking why a particular thing should not happen evades the duty of a hypothesis to explain how it does happen. It was one of Darwin's favorite rhetorical devices, and he used it repeatedly in *The Origin*."[427]

Able: "Almost all hypotheses are possible. Few of them wind up being helpful and scientifically productive. . . . The question for scientific methodology should *not* be, 'Is this scenario possible?' The question should be, 'Is this possibility a *plausible* scientific hypothesis?'"[428]

Behe: "One needs to relax Darwin's criterion from this:

> 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.

To something like this:

> If a complex organ exists which seems *very unlikely* to have been produced by numerous, successive, slight modifications, and if no experiments have shown that it or comparable structures can be so produced, then maybe we are *barking up the wrong tree*. So, LET'S BREAK SOME RULES!"[429]

Woodward: "Even though Darwin may seem to have been making a friendly gentlemen's wager, or perhaps issuing a *confident prediction* from his theory (and a way to falsify it), to me he seems to have used the quote more as a clever rhetorical device. He is referring to what he considers an extremely remote possibility, which the evidence of his day fell short of. In fact, he asserts right after this famous quote that he 'can find out no such case' where an organ cannot be formed by tiny successive changes, using his imagination and the data available to him."[430]

Lönnig: "Charles Darwin formulated some clear and unmistakable falsification criteria for his theory

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[426] Robert C. Koons, "The Check is in the Mail: Why Darwinism Fails to Inspire Confidence," in William A. Dembski, ed., *Uncommon Dissent: Intellectuals Who Find Darwinism Unconvincing* (Wilmington, DE: ISI Books, 2004), 13–14.

[427] Tom Bethell, *Darwin's House of Cards: A Journalist's Odyssey Through the Darwin Debates*, Kindle edition (Seattle: Discovery Institute Press, 2017), 28–29. Page numbers reflect the Kindle edition mapped to ISBN 1936599414 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for "Paul Nelson a"; for print readers, the page range provides approximate placement.

[428] https://tbiomed.biomedcentral.com/articles/10.1186/1742-4682-6-27

[429] Michael J. Behe, "Answering Scientific Criticisms of Intelligent Design," pp. 146, 147 [PDF pp. 14, 15], *Discovery Institute*, 1 December 2002, https://www.discovery.org/m/securepdfs/2021/08/Answer-Sci-Crit-Behe.pdf : accessed 29 October 2025.

[430] Thomas Woodward, *Darwin Strikes Back: Defending the Science of Intelligent Design* (Grand Rapids, MI: Baker Books, 2006), 67—68.

of natural selection."[431]

"Darwin formulated the following falsification criterium, among others, for his theory of natural selection – fully applicable to the modern neo-Darwinian versions of the theory as well, because: 'Natural selection cannot possibly produce any modification in any one species exclusively for the good of another species; '***… If it could be proved that any part of the structure of any one species had been formed for the exclusive good of another species, it would annihilate my theory,*** for such could not have been produced through natural selection.' Also: 'Natural selection can produce nothing in one species for the exclusive good or injury of another; though it may well produce parts, organs, and excretions highly useful or even indispensable, or again highly injurious to another species, ***but in all cases at the same time useful to the possessor.'***

"Inference reached on the basis of the evidence: Because in the case of the galls, in thousands of plant species often entirely new organs have been formed ***for the exclusive good of more than 132,930 other species***, these 'ugly facts' have annihilated Darwin's theory *as well as the modern versions of it*. The galls are not 'useful to the possessor', the plants. There is no space for these phenomena in the world of 'the selfish gene'. . . . Moreover, the same conclusion appears to be true for thousands of angiosperm species producing deceptive flowers (in contrast to gall formations, now for the exclusive good of the plant species)."[432]

Joshua: If Neo-Darwinism is false, I don't see why it should not be repudiated until an alternative theory replaces it.

Hunter: "This might be called the *no-alternative* defense of evolution. Not only must the critic show evolution to be flawed, he or she must also solve the problem. Falsifying evolution is not good enough, for evolution is presumed true until a better solution is provided."[433]

Johnson: "This rule is necessary because advocates of naturalism must at all times have a complete theory at their disposal to prevent any rival philosophy from establishing a foothold."[434]

"They can impose a rule of procedure that disqualifies purely negative argument, so that a theory with a very modest degree of empirical support can become immune to being disproved until and unless it is supplanted by a better naturalistic theory. . . .

". . . The rule against negative argument is arbitrary. It is as if a judge were to tell a defendant that he may not establish his innocence unless he can produce a suitable substitute to be charged with the crime."[435]

"It is better to admit ignorance than to have confidence in an explanation that is not true."[436]

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[431] Wolf-Ekkehard Lönnig, *Plant Galls and Evolution (I): How More than Twelve Thousand Ugly Facts Are Slaying a Beautiful Hypothesis: Darwinism* (self-published, 7 September 2017 [last updated 2 November 2017]), 11; digital file, https://www.weloennig.de/PlantGalls.pdf : accessed 11 November 2025.
[432] Wolf-Ekkehard Lönnig, *Plant Galls and Evolution (I): How More than Twelve Thousand Ugly Facts Are Slaying a Beautiful Hypothesis: Darwinism* (self-published, 7 September 2017 [last updated 2 November 2017]), 3; digital file, https://www.weloennig.de/PlantGalls.pdf : accessed 11 November 2025.
[433] Cornelius G. Hunter, *Darwin's God: Evolution and the Problem of Evil* (Grand Rapids, Mich.: Brazos Press, 2001), 156.
[434] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 156.
[435] Phillip E. Johnson, "Evolution as Dogma: The Establishment of Naturalism," in William A. Dembski, ed., *Uncommon Dissent: Intellectuals Who Find Darwinism Unconvincing* (Wilmington, DE: ISI Books, 2004), 37.
[436] Phillip E. Johnson, *Reason in the Balance: The Case Against Naturalism in Science, Law & Education* (Downers Grove, IL: InterVarsity Press, 1995), 12.

Dembski & Ewert: "Theories of paradigmatic rank, such as Darwinism, have tremendous staying power even when they are tested and found wanting. Adherents are loath to abandon them. 'Once it has reached the status of paradigm,' writes Thomas Kuhn . . . , 'a scientific theory is declared invalid only if an alternative candidate is available to take its place,' To this, Kuhn has Max Plank . . . add, 'A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.' . . . An alternative candidate to Darwinism is now in place in the form of intelligent design. But that doesn't mean Darwinism is going to fade gently into the night."[437]

West: "When one scientific theory becomes enshrined as a reigning paradigm, dissenting views are often silenced for reasons other than lack of evidence. Dissenting views represent a threat to the ruling paradigm, and so those who have earned power and prestige from advancing it are reluctant to let their authority be eroded.

"For this and other reasons, scientists who have spent their lives working within one paradigm may have a difficult time acknowledging problems within that paradigm no matter how much contrary evidence accumulates. Scientific paradigms can sometimes end up as dogmas where little dissent is tolerated."[438]

Axe: "Nobody approaches their science in a vacuum. There are no scientists who have no ideas about how the world works before they do their science. So, it's a simple fact that scientists bring their ideas and their preconceptions to their field. And what really happens is, to the extent those preconceptions are wrong, it's a hindrance to have them. To the extent that they're right, it's a help to have them. . . . What I look at and see design as so obvious it hits me in the face, a Darwinist—who has been thinking as a Darwinist for a whole career—looks at and does not see that at all. It's a matter of being kind of blinded by your paradigm."[439]

Lönnig: "One should be able to assume that every thinking person has some kind of 'worldview,' or whatever one wants to call it, and one can therefore say that we are all more or less 'biased' in this regard."[440]

Gonzalez & Richards: "All scientists are thinking human beings, and all thinking human beings have points of view, which shape how they see the world."[441]

Wells: "There is nothing wrong with having philosophical views. Everyone does, whether they admit

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[437] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 539n83.

[438] John G. West, *Darwin's Cancel Culture*, Rethink Series (Seattle: Discovery Institute's Center for Science and Culture, 2021), 18; https://www.discovery.org/f/67498/ : accessed 29 October 2025.

[439] Doug Axe, response to the question "Does personal philosophy affect the work of a scientist?," bonus feature "Questions & Answers," in *Darwin's Dilemma: The Mystery of the Cambrian Fossil Record*, directed by Lad Allen (La Mirada, California: Illustra Media, 2009), DVD.

[440] Wolf-Ekkehard Lönnig, *Ursprung und Entwicklung des Pflanzenreichs im Spiegel älterer und moderner Auffassungen: Kritische Betrachtung unter Auswahl geeigneter Beispiele* (MSc thesis, University of Berlin, 1971), 122 (PDF pagination); digital file, https://www.weloennig.de/Staatsexamensarbeit.pdf : accessed 6 December 2025. Quoted passage translated from German. The PDF version consulted includes addenda not present in the original thesis.

[441] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), 249.

it or not."[442]

Gonzalez & Richards: "The problem is not when scientists express their points of view in their scientific work, but when their points of view blind or distort their perception of the evidence."[443]

Wells: "Scientists, like everyone else, can be fooled into seeing what they want to see."[444]

Swift: "Science cannot operate in a conceptual vacuum: scientists need some sort of working hypothesis with which to view the world and assess their data. However, I believe it goes deeper than that: the requirement for at least some sort of paradigm is also a reflection of the current world-view that everything must have a scientific or natural explanation. That is, modern science is unwilling to admit that there may be some aspect of nature for which it cannot offer an explanation – and it would have any sort of explanation, no matter how defective it may be, rather than no explanation at all. And that is the important point so far as evolution is concerned. It is not that there is no conceivable alternative to evolution, but there is no viable *natural* alternative. . . .

". . . Undergirding the paradigm of evolution is the paradigm of naturalism. . . . Given the major problems at the biochemical level with the theory of evolution, and the discontinuities of the fossil record, I suspect that if a naturalistic alternative could be proposed that offered a credible solution to these problems, even if it meant demoting the role of natural selection, then such an alternative would be enthusiastically embraced. But in the absence of such a candidate it is better to cling to evolution despite its evident deficiencies; not to do so would be to abandon the even more cherished paradigm of naturalism."[445]

Meis: "The idea of evolution is linked to a world view. . . . If someone gives up the idea of evolution because of the impossibility of the functioning of its basic mechanisms, then a world view collapses for him. Avoiding this collapse usually leads – as history has taught us – to a kind of blindness to facts."[446]

Lönnig: "If one fundamentally cannot or does not want to expect an intelligent origin of life forms – macroevolution must have happened somehow."[447]

Pearcey: "Once one accepts the philosophy of naturalism, some form of naturalistic evolution is an 'inevitable corollary.' Finding a plausible scientific theory is secondary."[448]

Johnson: "To put it simply, you may believe on philosophical grounds that large-scale evolutionary

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[442] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 206.
[443] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), 249.
[444] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 218.
[445] David W. Swift, *Evolution Under the Microscope: A Scientific Critique of the Theory of Evolution* (Leighton, UK: Leighton Academic Press, 2002), 389.
[446] Karl Friederich Meis, "Kritikpunkt 9," *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, last updated 4 April 2024, https://www.intelligentdesigner.de/kritikpunkt-9/ : accessed 7 January 2026. Quoted passage translated from German.
[447] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 374; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.
[448] Nancy Pearcey, "You Guys Lost, Is Design a Closed Issue?" *Access Research Network*, 10 November 1999, https://www.arn.org/docs/pearcey/np_youguyslost.htm : accessed 26 August 2025.

transformations must have occurred, but this belief finds no support in the experimental evidence."[449]

Hunter: "What is core to the theory [of evolution]— and not forfeitable? It's naturalism. Period. That is the only thing required of evolutionary theory. And naturalism is a religious requirement, not a scientific one.

"Aside from naturalism, practically anything is fair game: Uncanny convergence, rapid divergence, lineage-specific biology, evolution of evolution, directed mutations, saltationism, unlikely simultaneous mutations, just-so stories, multiverses … the list goes on."[450]

Dembski: "Sometimes we can tell that science has gotten something wrong without having to identify what the correct or true explanation is."[451]

"Consider the case of superconductivity. When the experimental evidence went against the existing theory, science did not require that a replacement theory be ready and available before establishing that the existing theory was inadequate."[452]

Spetner: "I argue that if a theory cannot account for the facts, it has to be discarded even if there is no replacement. If the best you can get is no good, you shouldn't accept it."[453]

Lönnig: "If there is no or no satisfactory explanation for a phenomenon within the framework of the known laws of nature, then we are not helped by a pseudo-explanation that has been elevated to the status of law.

"On the contrary: If such a false explanation is generally accepted, then further research will ignore this point, i.e. the path to knowledge will remain blocked until the false explanation is exposed as such and removed."[454]

12.2.3 The Growing Scientific Reassessment

Joshua: Besides looking for ways to modify a theory to rescue it from serious anomalies, I think scientists should be willing to at least consider alternative explanations.

Laufmann & Glicksman: "TO THEIR credit, many materialist scientists now openly acknowledge that current material explanations for the origin and diversification of life are insufficient. But so far, most

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[449] Phillip E. Johnson, "The Wedge: Breaking the Modernist Monopoly on Science," *Access Research Network*, 1999, https://arn.org/docs/johnson/le_wedge.htm : accessed 26 December 2025.
[450] Cornelius Hunter, "There Is No Settled 'Theory of Evolution,'" *Science and Culture Today*, 10 November 2022, https://scienceandculture.com/2022/11/there-is-no-settled-theory-of-evolution/ : accessed 29 October 2025.
[451] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 208.
[452] William A. Dembski, "The Myths of Darwinism," introduction to William A. Dembski, ed., *Uncommon Dissent: Intellectuals Who Find Darwinism Unconvincing* (Wilmington, DE: ISI Books, 2004), xxxi.
[453] Lee M. Spetner, *The Evolution Revolution: Why Thinking People Are Rethinking the Theory of Evolution* (Brooklyn, NY: Judaica Press, 2014), 26.
[454] Wolf-Ekkehard Lönnig, *Ursprung und Entwicklung des Pflanzenreichs im Spiegel älterer und moderner Auffassungen: Kritische Betrachtung unter Auswahl geeigneter Beispiele* (MSc thesis, University of Berlin, 1971), 26–27 (PDF pagination); digital file, https://www.weloennig.de/Staatsexamensarbeit.pdf : accessed 6 December 2025. Quoted passage translated from German. The PDF version consulted includes addenda not present in the original thesis.

of them have been unwilling to abandon the causal limitations of their deeply cherished materialist assumptions. This puts them in a quandary. The first class of causation (material causes) is insufficient, and the second class of causation (intelligent causes) is unacceptable.

"This quandary has spawned a growing movement in biology, known as the 'third way,' whose proponents seek alternative explanations for the origin of complex biological features. But despite their persuasive arguments against all current forms of Darwinism, they've so far been unable to offer any new explanations that are causally sufficient and able to gain traction in the research community. We suggest that this is because they are searching for an unknown third class of causal force—one able to perform intentional acts, without meaning to."[455]

Luskin: "Third Way Evolution is 'biologically realist,' in that it recognizes the reality that non-randomness, teleology, purpose, function, intention, information, and top-down design permeate biology. However, because it is wedded to materialistic models of evolution, it is impotent to give adequate accounts for these observations. ID is also 'biologically realist' but it alone adopts an engineering perspective that can explain why teleology, non-randomness, and top-down design are ubiquitous in living systems."[456]

Behe: "All the new ideas—self-organization, facilitated variation, symbiosis, complexity theory, and more—are quickly concluded to be nonstarters, to have the same problems as Darwin's theory, or both. In the absence of an acceptable replacement—and because of its usefulness as a defensive talking point in fending off skepticism from the public—intellectual inertia maintains Darwinism as textbook orthodoxy."[457]

Meyer: "Many of these models repudiate crucial aspects of the neo-Darwinian synthesis either by denying, for example, the central importance of natural selection (as do neutral theorists) or the central role of random mutations (as do self-organizational theorists) or the random nature of mutations (as do advocates of natural genetic engineering).

"Thus, advocates of these and other new models of evolutionary theory do not continue to think that natural selection and random mutation play a central role in evolutionary innovation. . . . Most proponents of these newer models see themselves as proposing new mechanisms to replace the mutation/selection mechanism as the key driver in evolutionary innovation."[458]

D. Witt: "In the new paper ['Cooperative Genes in Smart Systems: Toward an Inclusive New Synthesis in Evolution,' in *Progress in Biophysics and Molecular Biology*], [biologist Peter] Corning argues that it's time to throw out the neo-Darwinian synthesis. He goes farther than the call for an 'extended synthesis' that was made by some biologists a few years ago. It's not that the synthesis needs to be

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[455] Steve Laufmann and Howard Glicksman, *Your Designed Body* (Seattle: Discovery Institute Press, 2022), 23.
[456] Casey Luskin, "Here's the Venn Diagram from My Conversation with Denis Noble," *Science and Culture Today*, 8 August 2025, https://scienceandculture.com/2025/08/heres-the-venn-diagram-from-my-conversation-with-denis-noble/ : accessed 29 October 2025.
[457] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 11. Page number reflects the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "all the new"; for print readers, the page number provides approximate placement.
[458] Stephen C. Meyer, "Walking It Back? Further Reflections on the Response to *Darwin's Doubt* from BioLogos," *Science and Culture Today*, March 2, 2015, https://scienceandculture.com/2015/03/walking_it_back : accessed 12 November 2025.

extended, he writes — it needs to be replaced."[459]

Gauger: "Because of the accidental effects of genetic drift in small populations, natural selection is *not strong enough* to guarantee that beneficial mutations will eventually become fixed (universal) in a population or that weakly harmful mutations will be eliminated. *Thus, in organisms with small effective population size (e.g. all vertebrates, which includes us humans), the stochastic and non-adaptive forces of mutation, recombination, and drift will tend to drive evolution in non-adaptive directions*."[460]

"One of the reasons many scientists acknowledge the insufficiency of Darwinism is because they know the accounting won't work. The mutation rate, the generation times, the strength of selection versus genetic drift, the population sizes, and the time available don't match up."[461]

Joshua: Would someone please name some individuals who are critical of classical neo-Darwinism, but are not creationists or ID proponents?

DeWolf, West, & Luskin: "In a scientific monograph published by Oxford University Press, biochemist Franklin Harold, who rejects ID, admitted . . . , 'we must concede that there are presently no detailed Darwinian accounts of the evolution of any biochemical or cellular system, only a variety of wishful speculations.'"[462]

Luskin: "[Biologist Michael] Lynch is clear in his views: 'there is no compelling empirical or theoretical evidence that complexity, modularity, redundancy or other features of genetic pathways are promoted by natural selection.'"[463]

Nelson: "For many years, Jerry Fodor has been an outspoken critic of Darwinian reasoning in cognitive science and the philosophy of mind / language. . . .

". . . Fodor — along with cognitive scientist Massimo Piattelli-Palmarini — has made his arguments fully general in *What Darwin Got Wrong*."[464]

Luskin: "In her 2002 book *Acquiring Genomes*, with Dorian Sagan, [Lynn Margulis] wrote: '. . . Mutations . . . tend to induce sickness, death, or deficiencies. No evidence in the vast literature of heredity changes shows unambiguous evidence that random mutation itself, even with geographical isolation of populations, leads to speciation.'"[465]

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[459] Daniel Witt, "Another Call for a 'New Synthesis,'" *Science and Culture Today*, May 1, 2024, https://scienceandculture.com/2024/05/another-call-for-a-new-synthesis/ : accessed October 29, 2025.
[460] Ann Gauger, "The Frailty of the Darwinian Hypothesis, Part 1," *Science and Culture Today*, 13 July 2009, https://scienceandculture.com/2009/07/the_frailty_of_the_darwinian_h/ : accessed 29 October 2025.
[461] Ann Gauger, "Waiting for Mutations: Why Darwinism Won't Work," *Science and Culture Today*, 23 September 2015, https://scienceandculture.com/2015/09/waiting_for_mut/ : accessed 29 October 2025.
[462] David K. DeWolf, John G. West, and Casey Luskin, *Intelligent Design Will Survive Kitzmiller v. Dover*, *Montana Law Review* 68, no. 1 (2007), 34 [PDF p. 28]; digital file, https://www.discovery.org/m/securepdfs/2021/03/Intelligent-Design-Will-Survive-Kitzmillerv.Dover-DeWolf-West-Luskin.pdf : accessed 12 November 2025.
[463] Casey Luskin, "Problem 4: Natural Selection Struggles to Fix Advantageous Traits in Populations," *Science and Culture Today*, 16 January 2015, https://scienceandculture.com/2015/01/problem_4_natur/ : accessed 29 October 2025.
[464] Paul Nelson, "A Look at What Darwin Got Wrong," *Science and Culture Today*, 5 January 2010, https://scienceandculture.com/2010/01/a_look_at_what_darwin_got_wron/ : accessed 29 October 2025.
[465] Casey Luskin, "Lynn Margulis, Acclaimed Biologist and Critic of Neo-Darwinism, RIP," *Science and Culture Today*, 23 November 2011, https://scienceandculture.com/2011/11/lynn_margulis_a/ : accessed 29 October 2025.

"There's no doubt that as a member of the U.S. National Academy of Sciences, Margulis is generally tolerated. Why is that?

"Well, for one Margulis has made significant contributions to evolutionary thinking with her endosymbiosis hypothesis–an idea which is highly flawed–but nonetheless courts her favor with modern evolutionary biologists.

"But when critics of the Darwinian paradigm like Margulis are tolerated, it's because they wholly reject intelligent design and believe that unguided material causes built all of life's complexity. They don't threaten the core materialism of neo-Darwinism, making it unsurprising that they have experienced no persecution. Rejecting ID and embracing materialism seems to be a necessary condition of being tolerated as a dissenter from neo-Darwinism."[466]

Wells: "In 2007, Massimo Pigliucci published a paper asking whether we need 'an extended evolutionary synthesis' that goes beyond neo-Darwinism. The following year, Pigliucci and fifteen other biologists gathered at the Konrad Lorenz Institute for Evolution and Cognition Research just north of Vienna to discuss the question. Science journalist Suzan Mazur called this group 'the Altenberg 16.'. . .

". . . The Altenberg 16 published a collection of their essays in 2010. The authors were not creationists or ID supporters, and they did not challenge materialistic descent with modification. But they did challenge the Darwinian idea that organisms could evolve solely by the gradual accumulation of small variations preserved by natural selection, and the neo-Darwinian idea that DNA is 'the sole agent of variation and unit of inheritance.' . . .

"In 2014 Shapiro, along with British physiologist Denis Noble and website developer Raju Pookottil, started an online forum for scientists and other scholars who 'see the need for a deeper and more complete exploration of all aspects of the evolutionary process.' They called their enterprise The Third Way of Evolution, and many scholars are now affiliated with it. The website makes it clear that it and the scientists listed on it 'do not support or subscribe to' creationism or intelligent design. Nevertheless, it demonstrates a growing dissatisfaction with modern evolutionary theory."[467]

Behe: "[James A.] Shapiro correctly notes that, 'as many biologists have argued since the nineteenth century, random changes would overwhelmingly tend to degrade intricately organized systems rather than adapt them to new functions.'"[468]

Luskin: "[Oxford University biologist Denis Noble] says quite squarely, 'The fact is I think neo-Darwinism is dead.'"[469]

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[466] Casey Luskin, "Lynn Margulis Criticizes Neo-Darwinism in *Discover* Magazine (Updated)," *Science and Culture Today*, 12 April 2011, https://scienceandculture.com/2011/04/lynn_margulis_criticizes_neo-d/ : accessed 29 October 2025.

[467] Jonathan Wells, *Zombie Science: More Icons of Evolution*, Kindle edition (Seattle: Discovery Institute Press, 2017), 181–182. Page numbers reflect the Kindle edition mapped to ISBN 1936599449 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "2007 Massimo"; for print readers, the page range provides approximate placement.

[468] Michael J. Behe, *Darwin Devolves: The New Science About DNA That Challenges Evolution*, Kindle edition (HarperOne, 2024), 131. Page number reflects the Kindle edition mapped to ISBN 0062842617 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "Shapiro correctly"; for print readers, the page number provides approximate placement.

[469] Casey Luskin, "Denis Noble: 'The Fact Is that I Think Neo-Darwinism Is Dead,'" *Science and Culture Today*, July 30, 2024, https://scienceandculture.com/2024/07/denis-noble-the-fact-is-that-i-think-neo-darwinism-is-dead/ : accessed October 29, 2025.

McDiarmid: "Yale University professor of computer science David Gelernter wrote that he was bidding farewell to neo-Darwinian evolutionary theory. . . .

". . . Gelernter is no creationist, nor is he a proponent of intelligent design."[470]

Luskin: "In 2012, the noted atheist philosopher Thomas Nagel argued in an Oxford University Press book that 'the materialist neo-Darwinian conception of nature is almost certainly false.'"[471]

Joshua: Nagel wrote, "It is prima facie highly implausible that life as we know it is the result of a sequence of physical accidents together with the mechanism of natural selection."[472] He adds, "It is no longer legitimate simply to imagine a sequence of gradually evolving phenotypes, as if their appearance through mutations in the DNA were unproblematic."[473]

West: "[Evolutionary biologist Stanley Salthe] explained in 2003: 'Darwinian evolutionary theory was my field of specialization in biology. Among other things, I wrote a textbook on the subject thirty years ago. Meanwhile, however, I have become an apostate from Darwinian theory and have described it as part of modernism's origination myth.'"[474]

Luskin: "[Evolutionary biologist Günter] Theißen . . . has criticized the very core of the prevailing neo-Darwinian paradigm."[475]

Dembski & Wells: "Some, like Stuart Kauffman, Brian Goodwin, and Robert Laughlin, take a self-organizational approach in which the laws of self-organization and complexity take precedence over natural selection."[476]

12.2.4 The Limits of Self-Organization and the Origin of Biological Information

Gonzalez & Richards: "Self-organizational scenarios generally suffer from a basic conceptual problem. The self-organizing systems known in nature create repetitive ordered patterns."[477]

Meyer: "The information-bearing sequences in protein-coding DNA and RNA molecules do not exhibit

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[470] Andrew McDiarmid, "Five Years Ago, Yale's David Gelernter Gave Up on Darwin," *Science and Culture Today*, July 10, 2024, https://scienceandculture.com/2024/07/five-years-ago-yales-david-gelernter-gave-up-on-darwin/ : accessed October 29, 2025.
[471] Casey Luskin, "Information for Students about the Scientific Dissent from Darwinism List," *Science and Culture Today*, March 10, 2015, https://scienceandculture.com/2015/03/information_for/ : accessed October 29, 2025.
[472] Thomas Nagel, *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False* (New York: Oxford University Press, 2012), 6.
[473] Thomas Nagel, *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False* (New York: Oxford University Press, 2012), 9.
[474] John G. West, "Exposure of NYT's Evolving Definition of 'Biologist' Hits Nerve," *Science and Culture Today*, February 26, 2006, https://scienceandculture.com/2006/02/exposure_of_nyts_evolving_defi/ : accessed October 29, 2025.
[475] Casey Luskin, "On the 'Settled' Science of Darwinian Theory, Tennessee's Evolution Lobby Is Simply Bluffing," *Science and Culture Today*, April 5, 2012, https://scienceandculture.com/2012/04/on_the_settled_/ : accessed October 29, 2025.
[476] William A. Dembski and Jonathan Wells, *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), 27.
[477] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), 410n29.

such repetitive 'order,' however. As such, these sequences can be neither described nor explained by reference to a natural law or law-like 'self-organizational' process. The kind of non-repetitive 'order' on display in DNA and RNA—a precise sequential 'order' necessary to ensure function—is not the kind that laws of nature or law-like self-organizational processes can—in principle—generate or explain.

". . . A curious feature of the chemistry of DNA allows any one of the four nucleotide bases to attach to any site on the interior backbone of the DNA molecule. This chemical indeterminacy makes it possible for DNA and RNA to store any one of a virtually unlimited number of different arrangements of nucleotide bases—in effect, to encode any genetic message. But this indeterminacy also categorically defies explanation by deterministic law-like forces of chemical attraction. And because forces of attraction do not determine the sequence of nucleotide bases in DNA or RNA, the *origin* of the specific arrangement of the bases—the information in DNA and RNA—cannot be attributed to self-organizing forces of attraction either."[478]

"As *Polanyi* . . . noted, 'As the arrangement of a printed page is extraneous to the chemistry of the printed page, so is the base sequence in a DNA molecule extraneous to the chemical forces at work in the DNA molecule.'"[479]

Dembski: "Known material mechanisms can tell us conclusively that a phenomenon is contingent and that it allows full degrees of freedom. Any unknown mechanism would then have to respect that contingency and allow for the degrees of freedom already discovered.

". . . The position of Scrabble pieces on a Scrabble board is irreducible to the natural laws governing the motion of Scrabble pieces, the configuration of ink on a sheet of paper is irreducible to the physics and chemistry of paper and ink, the sequencing of DNA bases is irreducible to the bonding affinities between the bases, and so on.

"By establishing a range of possibilities on the basis of known material mechanisms, this method precludes unknown material mechanisms from constricting that range."[480]

"The design found in nature therefore demonstrates that nature is incomplete. In other words, nature exhibits design that nature is unable to account for. What's more, since the design in nature is identified through specified complexity, and since specified complexity is a form of information and since this form of information is beyond the capacity of nature, it follows that specified complexity and the design it signifies is information ex nihilo. That is, it's information that cannot be derived from natural forces acting on preexisting stuff. Indeed, to attribute the specified complexity in biological systems to natural forces is like saying that Scrabble pieces have the power to arrange themselves into meaningful sentences. The absurdity is equally palpable in both cases. Only in evolutionary biology the absurdity has been repeated so often that we no longer recognize it.[481]

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[478] Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (New York: HarperOne, 2013), 307–308.
[479] Stephen C. Meyer, "A Scientific History – and Philosophical Defense – of the Theory of Intelligent Design," 9; digital file, https://www.discovery.org/m/2018/11/Scientific-History-Philosophical-Defense-Intelligent-Design-Stephen-Meyer.pdf : accessed 11 January 2026.
[480] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 98–99.
[481] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 147.

Section 13

13.1 Dialogue in *Reason in the Balance*:

Stephen: But what about the problem that science is supposed to explain the underlying mechanisms for phenomena? Darwin didn't have any way of explaining how traits got changed or passed on or anything.

Winnie: You're right. That was a crucial weakness in Darwin's theory. But in the twentieth century, this problem was solved with Mendel's theory of genetics and the biochemistry of DNA. So now Darwin's theory has all the ingredients of a well-established scientific theory. It's been enormously fruitful, it explains a vast range of phenomena, and it's led to the discovery of underlying microexplanations.[482]

13.2 Extended Dialogue

13.2.1 Fruitful False Theories

Rammmerstorfer: "The history of science testifies to dubious concepts that were very fruitful—for example, by 1935, the concept of 'mitogenic radiation' had generated over 500 publications. . . . However, this did not change the fact that the underlying phenomenon of 'mitogenic radiation' itself was more than dubious. Of course, the hunt for a phantom yields interesting discoveries and has an inspiring effect, but the phantom itself does not become any more real. A fantasy or a line of thought, no matter how elegant and plausible it may seem, that produces concrete scientific theories and may even feel confirmed in some points, is by no means necessarily correct."[483]

Lönnig: "Evolutionary biologists . . . have made numerous outstanding (factual) discoveries in the fields of anatomy, morphology, physiology, developmental biology, genetics, paleontology and animal and plant geography, which I, of course, fully accept (I myself work together with numerous evolutionists). However, the evolutionary, unscientific interpretations of the findings that often accompany these discoveries are a completely different matter."[484]

"A false hypothesis can very well lead to scientifically valuable results. Atheists who claim that living things, in all their diversity, are the product of 'random variation' and selective selection, have made a multitude of highly interesting biological discoveries in their quest to prove this hypothesis, which is essential to their worldview, even if it has since been proven false. In their research into life forms,

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[482] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 313.

[483] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 62. Quoted passage translated from German.

[484] Wolf-Ekkehard Lönnig, *Die Evolution der karnivoren Pflanzen: Was die Selektion nicht leisten kann – das Beispiel Utricularia (Wasserschlauch)*, 3rd improved edition (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2012), 179–180 [PDF 193–194]; digital file, https://www.weloennig.de/Utricularia2011Buch.pdf : accessed 9 December 2025. Quoted passage translated from German.

they have uncovered facts that have undoubtedly deepened our understanding of the laws governing the living world."[485]

"Although the enormous successes and world-wide revolution firmly expected in plant and animal breeding in connection with the assumptions of the synthetic theory did not materialize, science nevertheless profited from the intense efforts of mutation breeding 'by a rapid increase of the information on the localization of genetic effects in the genome of important cultivated plants'.

"Thus, basic scientific research has substantially benefited from this enterprise."[486]

13.2.2 The Rise of the Modern Synthesis in Historical Context

Pearcey: "Contrary to a common misconception, Darwin did not actually win over many contemporaries to his theory. Even those who identified themselves as supporters often did not in fact accept his theory of natural selection. It was not until the 1930s and 40s, with the development of the modern synthesis (i.e., the combination of Darwin's theory with findings from genetics), that natural selection was finally accepted as the central mechanism of evolution. Those who insist that Darwin closed the issue are anachronistically reading back into history the views held by most modern biologists."[487]

Meyer: "The mechanism of natural selection had a mixed reception in the immediate post-Darwinian period. As the historian of biology *Peter Bowler* . . . has noted, classical Darwinism entered a period of eclipse during the late 19th and early 20th centuries mainly because Darwin lacked an adequate theory for the origin and transmission of new heritable variation. Natural selection, as Darwin well understood, could accomplish nothing without a steady supply of genetic variation, the ultimate source of new biological structure. Nevertheless, both the blending theory of inheritance that Darwin had assumed and the classical Mendelian genetics that soon replaced it, implied limitations on the amount of genetic variability available to natural selection. This in turn implied limits on the amount of novel structure that natural selection could produce.

"By the late 1930s and 1940s, however, natural selection was revived as the main engine of evolutionary change as developments in a number of fields helped to clarify the nature of genetic variation. . . . According to the new synthetic theory of evolution, the mechanism of natural selection acting upon random variations (especially including small-scale mutations) sufficed to account for the origin of novel biological forms and structures. Small-scale 'microevolutionary' changes could be extrapolated indefinitely to account for large-scale 'macroevolutionary' development. . . . By the centennial celebration of Darwin's *Origin of Species* in 1959, it was assumed by many scientists that natural selection could fully explain the appearance of design and that, consequently, the design

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[485] Wolf-Ekkehard Lönnig, *Ursprung und Entwicklung des Pflanzenreichs im Spiegel älterer und moderner Auffassungen: Kritische Betrachtung unter Auswahl geeigneter Beispiele* (MSc thesis, University of Berlin, 1971), 122 (PDF pagination); digital file, https://www.weloennig.de/Staatsexamensarbeit.pdf : accessed 6 December 2025. Quoted passage translated from German. The PDF version consulted includes addenda not present in the original thesis.

[486] Wolf-Ekkehard Lönnig, "Mutation Breeding, Evolution, and the Law of Recurrent Variation," *Recent Research Developments in Genetics & Breeding* 2 (Trivandrum, India: Research Signpost, 2005), 53 [PDF p. 9]; PDF reprint, slightly corrected 1 December 2007, https://www.weloennig.de/Loennig-Long-Version-of-Law-of-Recurrent-Variation.pdf : accessed 9 November 2025.

[487] Nancy Pearcey, "You Guys Lost, Is Design a Closed Issue?" *Access Research Network*, 10 November 1999, https://www.arn.org/docs/pearcey/np_youguyslost.htm : accessed 26 August 2025.

argument in biology was dead.

"Since the late 1960s, however, the modern synthesis that emerged during the 1930s, 1940s and 1950s has begun to unravel in the face of new developments in paleontology, systematics, molecular biology, genetics and developmental biology."[488]

13.2.3 Mendelian Stability

Davis & Kenyon: "Mendelian genetics has proved to be a mixed blessing for Darwinian theory. On the one hand, it provides the stability necessary for a trait to become established in a population. On the other hand, stability is just what Darwinism doesn't need if change is to be so far-ranging as to produce the whole complex web of life from a single-celled organism."[489]

Dembski & Wells: "Natural selection has a much easier time of it working with and taking advantage of hereditary factors that are stable (as occur in Mendel's theory). But this very stability stands in the way of these hereditary factors changing sufficiently to induce genuinely novel traits (as required by Darwin's theory)."[490]

Sermonti: "As observed in nature and reported in paleontological finds, living species seem to be substantially stable over time, capable of resisting change for millions (and in some cases hundreds of millions) of years. Things fluctuate, but only in order to remain what they are."[491]

"Natural Selection . . . mainly has the effect of maintaining equilibrium and stability. It eliminates all those that dare to depart from type—the eccentrics and the adventurers and the marginal sort. It is ever adjusting populations, but it does so in each case by bringing them back to the norm. We read in textbooks that, when environmental conditions change, the selection process may produce a shift in a population's mean values, by a process known as adaptation. If the climate turns very cold, the cold-adapted beings are favored relative to others; if it becomes windy, the wind blows away those that are most exposed; if an illness breaks out, those in questionable health will be lost. But all these artful guiles serve their purpose only until the clouds blow away. The species, in fact, is an organic entity, a typical form, which may deviate only to return to the furrow of its destiny. . . .

"It is true that species may lose something along the way—the mole its eyes, say, and the succulent plant its leaves, never to recover them again. But here we are dealing with unhappy, mutilated species, at the margins of their area of distribution—the extreme and the specialized. These are species with no future; they are not pioneers, but prisoners in nature's penitentiary."[492]

Lönnig: "It is precisely the loss of 'selection pressure' (animals that would otherwise be eaten by

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[488] Stephen C. Meyer, "A Scientific History – and Philosophical Defense – of the Theory of Intelligent Design," 5–6; digital file, https://www.discovery.org/m/2018/11/Scientific-History-Philosophical-Defense-Intelligent-Design-Stephen-Meyer.pdf : accessed 11 January 2026.
[489] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 9.
[490] William A. Dembski and Jonathan Wells, *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), 32.
[491] Giuseppe Sermonti, *Why Is a Fly Not a Horse?* (Seattle: Discovery Institute Press, Center for Science and Culture, 2005), 48.
[492] Giuseppe Sermonti, *Why Is a Fly Not a Horse?* (Seattle: Discovery Institute Press, Center for Science and Culture, 2005), 51—52.

predators and that would normally no longer be able to cope with their environment due to functional impairment of various organs that can often still hold their own on islands) that enables the degeneration of various functions on a larger scale."[493]

Behe: "The more genes that are degraded for short-term evolutionary adaption, the fewer available for future adaption, and the more brittle a species becomes."[494]

[493] Wolf-Ekkehard Lönnig, "Inselpopulationen," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesV1.1.Ipop.html : accessed 2 November 2025. Quoted passage translated from German.

[494] Michael J. Behe, *Darwin Devolves: The New Science About DNA That Challenges Evolution*, Kindle edition (HarperOne, 2024), 196. Page number reflects the Kindle edition mapped to ISBN 0062842617 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "more genes"; for print readers, the page number provides approximate placement.

Section 14

14.1 Dialogue in *Reason in the Balance*:

Stephen: OK, so Darwin's made some good arguments for his theory. And he's stuck to the basic strategy of argument to the best explanation. But that doesn't mean his theory isn't just a theory and that there aren't problems with the theory that no one can explain.

Winnie: You seem to be using the word "theory" in the sense of an unconfirmed or untested hypothesis. Like a detective who has a theory about the crime.

Stephen: Right. Is there anything wrong with that? I mean, we don't talk about Newton's theory of gravity—we talk about his law of gravity. Gravity isn't a theory.

Winnie: True, but to understand that you need to look at the history of science again. Newton talked about laws because he believed he was revealing God's laws—the laws which the celestial bodies obeyed. By the time we get to Darwin, Darwin knows he's not articulating God's laws. He's putting forward a powerful scientific theory. The distinction in science is between well-established theories and those that are not well established or are even false. The word "theory" isn't used in science to put down a scientific claim or suggest it's not credible. Darwin's theory is extremely well established and enormously fruitful. It's a model of a highly successful account of the natural world.[495]

14.2 Extended Dialogue

14.2.1 The Meaning of "Theory" and Equivocation in Evolution

Johnson: "When the theory is stated as a hypothesis requiring empirical confirmation, the supporting evidence is not impressive."[496]

"Darwinian theory attributes biological complexity to the accumulation of adaptive micromutations by natural selection, but the creative power of this hypothetical mechanism has never been demonstrated, and the fossil evidence is inconsistent with the claim that biological creation occurred in that way."[497]

Wells: "Despite an enormous amount of biological research since the 1930s, the 'sign of equality' between microevolution and macroevolution remains nothing more than what Dobzhansky called it: a hypothesis. And indeed, it remains a hypothesis starving for lack of evidence.

"People speaking for the current scientific consensus often lump microevolution and macroevolution together and refer to them simply as evolution—a verbal sleight of hand in place of evidence for Dobzhansky's hoped-for 'sign of equality' between the two. Such confusion is regrettable, but

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[495] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 313–314.
[496] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 176.
[497] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 158.

common."[498]

G. Kemper, H. Kemper, & Luskin: "When terms are not carefully defined, miscommunication and false leaps of logic can result."[499]

ReMine: "For many years I pursued the hobby of magic.

". . . Magic is a psychological art. Magicians study the psychology of illusion, and the psychological techniques are often powerful."[500]

"There are many illusions about evolutionary theory and the data – and these must be dispelled before you can see clearly."[501]

"Evolutionists often misuse the word evolution and create illusion by equivocating this simple word."[502]

G. Kemper, H. Kemper, & Luskin: "Following Darwin's approach, a common tactic of **evolutionists** is to take evidence for microevolution and then claim it demonstrates macroevolution."[503]

"Proponents of Darwinism commonly pull an evolutionary 'bait-and-switch,' citing small-scale changes in the colors of moths or the sizes of finch beaks, and then extrapolating to claim that fundamentally new types of organism can evolve."[504]

P. Johnson: "When our leading scientists have to resort to the sort of distortion that would land a stock promoter in jail, you know they are in trouble."[505]

Rammerstorfer: "Isn't it interesting to observe how 'evolution' is often proven in popular scientific discourse? Where evidence of resistance in bacteria, color variations, size and shape variations, etc., is used to prove 'evolution'—as if there were no doubt about the *scope* of such evidence? A common motto for the lay public: 'If such changes occur in a short time, how much more is possible over long periods... – isn't all of this wonderfully logical?'"[506]

Pearcey: "Examples of micro-evolution continue to be exhibited as the prime factual evidence

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[498] Jonathan Wells, *Zombie Science: More Icons of Evolution*, Kindle edition (Seattle: Discovery Institute Press, 2017), 21. Page number reflects the Kindle edition mapped to ISBN 1936599449 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "despite an"; for print readers, the page provides approximate placement.

[499] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 31.

[500] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 7.

[501] Walter ReMine, "Message Theory – A Testable ID Alternative to Darwinism – Part 3," Uncommon Descent, 3 April 2009, https://uncommondescent.com/intelligent-design/message-theory-a-testable-id-alternative-to-darwinism-part-3 : 12 November 2025.

[502] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 299.

[503] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 29.

[504] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 160.

[505] Phillip E. Johnson, "The Church of Darwin," *Discovery Institute*, 16 August 1999, https://www.discovery.org/a/7/ : accessed 29 October 2025.

[506] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 53. Quoted passage translated from German.

supporting naturalistic theories of evolution."[507]

Durston: "Many people who embrace Darwinian evolution confidently state that evolution is a proven fact. They say this on the basis of thousands of papers discussing microevolution. . . .

"Macroevolution is very different from microevolution. The reason there are so many countless observations of variation/microevolution is that it requires no statistically significant levels of novel genetic information; it is trivially easy to achieve. The reason that macroevolution has never been observed is that it requires statistically significant levels of novel genetic information."[508]

Dembski: "Remove the promissory notes and rationalizations, and Darwinism becomes a quite modest theory."[509]

Spetner: "The argument in *The Origin of the Species* is not a theory in the modern sense because it was too vague on the details of how evolution could happen. The argument essentially was that evolution seemed plausible, but the apparent plausibility was a result of the limited knowledge of biology that prevailed at the time. I would guess if Darwin's arguments would have waited until now to be presented they would not have had the acceptance they received in 1895. Today (in fields other than evolution) we are more demanding about what constitutes a scientific theory. We would have at least demanded a probability calculation to show the random events that are crucial to the theory to have a high enough probability to make the theory reasonable."[510]

Luskin: "Given that the technical, scientific, *hard* definition of theory does typically mean a well-established and verified explanation, then it is best if Darwin-skeptics take the high road and avoid calling neo-Darwinian evolution 'just a theory.' . . .

"The 'evolution is just a theory' line is simply not a good way of expressing skepticism about neo-Darwinian evolution because it assumes that a theory is something which necessarily lacks evidentiary support. . . .

"*When someone says 'evolution is just a theory,' it sounds like the speaker cannot cite actual scientific evidence against evolution, and that the only objection the speaker can muster is based upon appealing to postmodern rhetoric which asserts that we really can't know if anything is true. The truth is that science is capable of studying the validity of historical scientific theories such as neo-Darwinism, but the 'evolution is just a theory' line makes it sound like the speaker is not interested in studying or discussing that evidence. In the debate over evolution, discussions of evidence are what matter most. . . . Calling something a theory doesn't necessarily tell you about the state of the evidence. The best way to express dissent from evolution is to actually discuss its failure to explain the scientific evidence.*

"*The 'evolution is just a theory' line can come off as if the speaker really thinks 'evolution is just a guess, so I don't have to believe it if I don't want to.' In fact, neo-Darwinian evolution as a whole is not merely a guess and most Darwinian scientists will provide reasons why they think it is the best explanation for the diversification of life. If you're like me, and you think that neo-Darwinian evolution has scientific problems, then you should be able to provide reasons beyond stating 'it's just a theory.' As noted*

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[507] Nancy Pearcey, "You Guys Lost, Is Design a Closed Issue?" *Access Research Network*, 10 November 1999, https://www.arn.org/docs/pearcey/np_youguyslost.htm : accessed 26 August 2025.
[508] Kirk Durston, "Microevolution versus Macroevolution: Two Mistakes," *Science and Culture Today*, July 16, 2015, https://scienceandculture.com/2015/07/microevolution/ : accessed October 29, 2025.
[509] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 270.
[510] Lee M. Spetner, *The Evolution Revolution: Why Thinking People Are Rethinking the Theory of Evolution* (Brooklyn, NY: Judaica Press, 2014), 135–136.

above, the best strategy is for you to be prepared to give a few specific scientific reasons why you question Darwinian evolution."[511]

[511] Casey Luskin, "Is 'Evolution' a 'Theory' or 'Fact' or Is This Just a Trivial Game of Semantics?" *Discovery Institute*, 28 July 2008, https://www.discovery.org/a/6401/ : accessed 29 October 2025.

Section 15

15.1 Authors of *Reason in the Balance*

Bailin & Battersby: "Calling a scientific theory a 'theory' is not to suggest that it is especially uncertain or unjustified. There are well-established theories and new and poorly established theories. In addition, theories of great fruitfulness such as natural selection and Newtonian mechanics, when confronted with problems and anomalies, are most likely to be adapted rather than replaced by a totally different theory. Abandoning evolutionary theory for a spiritual account of evolution is not like abandoning one theory in science and replacing it by another, such as we saw with Hess and plate tectonics. It means abandoning scientific explanation altogether."[512]

15.2 Extended Dialogue

15.2.1 The Proper Domain of Darwinian Theory

Dembski: "It is always a temptation in science to think that one's theory encompasses a far bigger domain than it actually does. This happened with Newtonian mechanics. . . . So too, the proper domain of the Darwinian selection mechanism is far more constricted than most Darwinists would like to admit. In particular, large-scale evolutionary changes in which organisms gain novel information-rich structures cannot legitimately be derived from the Darwinian selection mechanism."[513]

[512] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 314.
[513] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 207.

Section 16

16.1 Dialogue in *Reason in the Balance*:

Stephen: But not all scientists believe Darwin's theory.

Winnie: I'm sure you're right. And a few of those doubters have made great efforts to try to undermine confidence in evolutionary theory in favor of some kind of intelligent design version of creationism. But when they do that, they're not really doing science. They've taken a theological viewpoint.[514]

16.2 Extended Dialogue

16.2.1 Scientific Dissent and the Diversity of Skepticism About Darwinism

Lönnig: "Evolution . . . cannot honestly be spoken of as a fact like mountain ranges, that the sun is hot, like gravity etc. It is definitely *not* 'beyond reasonable doubt', neither 'beyond serious doubt', nor 'beyond sane, informed, intelligent doubt'. Incessantly asserting the opposite, speaking of 'the fact of evolution', appears to be a form of 'religion' (in the original meaning of the word)."[515]

West: "More than 1,000 doctoral scientists have signed their names to 'A Scientific Dissent from Darwinism,' which announces that they are 'skeptical of claims for the ability of random mutation and natural selection to account for the complexity of life' and states that 'careful examination of the evidence for Darwinian theory should be encouraged.'

"Signers of the declaration include members of the national academies of science in the United States, Russia, Poland, the Czech Republic, Brazil, and India (Hindustan), as well as faculty and researchers from a wide range of universities and colleges, including Princeton, MIT, Dartmouth, the University of Idaho, Tulane, and the University of Michigan."[516]

Joshua: The "A Scientific Dissent From Darwinism" statement that can be found here: https://dissentfromdarwin.org/

Leisola: "One of the signers was Professor Henry Schaefer III, who has published some 800 scientific papers on theoretical chemistry and has been five times a candidate for a Nobel Prize."[517]

West: "'Some defenders of Darwinism embrace standards of evidence for evolution that as scientists

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[514] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 314.
[515] Wolf-Ekkehard Lönnig, *The Evolution of Man: What Do We Really Know? Testing the Theories of Gradualism, Saltationism and Intelligent Design*, (self-published, 18/19 July and 21 August 2019; with supplement, 9 and 19 September 2019), 33; digital file, https://www.weloennig.de/HumanEvolution.pdf : accessed 9 November 2025.
[516] John G. West, *Darwin's Cancel Culture*, Rethink Series (Seattle: Discovery Institute's Center for Science and Culture, 2021), 23; https://www.discovery.org/f/67498/ : accessed 29 October 2025.
[517] Matti Leisola and Jonathan Witt, *Heretic: One Scientist's Journey from Darwin to Design* (Seattle: Discovery Institute Press, 2018), 95.

they would never accept in other circumstances,' said . . . Schaeffer. . . .

"Other signers expressed similar concerns. 'The ideology and philosophy of neo-Darwinism, which is sold by its adepts as a scientific theoretical foundation of biology, seriously hampers the development of science and hides from students the field's real problems,' declared Vladimir L. Voeikov, Professor of Bio-organic Chemistry at Lomonosov Moscow State University. Microbiologist Scott Minnich at the University of Idaho complained that Darwinian theory was 'the exceptional area that you can't criticize' in science, something he considered 'a bad precedent.'"[518]

Leisola: "Most of the signers had doctoral degrees in science, with a handful having Ph.Ds. in fields that, while not part of the natural or life sciences, gave them a valuable and relevant perspective on the evolution question—e.g., engineering and mathematics. . . . Its purpose is to show that there are serious scientists who question Darwin's theory. I am confident, incidentally, that the number of names on the list only scratches the surface, since I know scientists who, while skeptical of modern Darwinism, have not signed the document because they are afraid of the consequences."[519]

Luskin: "The truth is that mathematics has a strong tradition of giving cogent critique of evolutionary biology."[520]

Miller: "Due to my training in physics and engineering, I come to the discussion of intelligent design a bit differently from biologists. . . .

". . . To those who have studied engineering, the evidence for design in biology is obvious."[521]

Coppedge: "Teaching engineering at an early age may prove to be the antidote to Darwinism for the next generation."[522]

Sewell: "I know a good many mathematicians, physicists, and computer scientists who, like me, are appalled that Darwin's explanation for the development of life is so widely accepted in the life sciences. Few of them ever speak out or write on this issue, however—perhaps because they feel the question is simply out of their domain."[523]

Lönnig: "I have the impression that the theory of evolution can only be maintained by abandoning fundamental biological facts and renouncing basic mathematical truths."[524]

Behe: "Mathematicians over the years have complained that Darwinism's numbers just do not add

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[518] John G. West, *Darwin's Cancel Culture*, Rethink Series (Seattle: Discovery Institute's Center for Science and Culture, 2021), 23–24; https://www.discovery.org/f/67498/ : accessed 29 October 2025.
[519] Matti Leisola and Jonathan Witt, *Heretic: One Scientist's Journey from Darwin to Design* (Seattle: Discovery Institute Press, 2018), 144.
[520] Casey Luskin, "Mathematicians and Evolution," *Science and Culture Today*, July 11, 2006, https://scienceandculture.com/2006/07/mathematicians_and_evolution/ : accessed October 29, 2025.
[521] Brian Miller, "Biology as Reverse Engineering," *Science and Culture Today*, January 13, 2022, https://scienceandculture.com/2022/01/biology-as-reverse-engineering/ : accessed October 29, 2025.
[522] David Coppedge, "Engineering Brings Life and Vice Versa," *Science and Culture Today*, March 29, 2023, https://scienceandculture.com/2023/03/engineering-brings-life-and-vice-versa/ : accessed October 29, 2025.
[523] Granville Sewell, "A Mathematician's View of Evolution*," The Mathematical Intelligencer* 22, no. 4 (2000), 5, https://math.utep.edu/faculty/sewell/articles/mathint.pdf : accessed on 4 April 2025.
[524] Wolf-Ekkehard Lönnig, Foreword to the second edition (1989) of *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie,* online edition, https://www.weloennig.de/AuVor2.html : accessed 11 December 2025.

up."[525]

Wells: "Most biologists work in fields far removed from evolutionary biology."[526]

"Most biologists are honest, hard-working scientists who insist on accurate presentation of the evidence, but who rarely venture outside of their own fields. . . . Many of these biologists believe in Darwinian evolution because that's what they learned from their textbooks. In other words, they have been misled by the same misrepresentations that have fooled the general public."[527]

"Even though most biologists might consider themselves Darwinists, in many cases it is only because they believe what their more dogmatic colleagues are telling them."[528]

Behe: "Scientists, like everybody else, base most of their opinions on the word of other people. Of the great majority who accept Darwinism, most (though not all) do so based on authority."[529]

Wells: "The truth is that a surprising number of biologists quietly doubt or reject some of the grander claims of Darwinian evolution."[530]

Miller: "A biologist in our network worked as a postdoctoral researcher at Harvard. He recounted how about a quarter of the postdocs he encountered were at least sympathetic to design arguments, but none were willing to acknowledge their support publicly due to the likely repercussions. In addition, increasing numbers of scientists who are not even philosophically open to the possibility of design are secretly dialoguing with our scientists. They have grown weary of their colleagues misrepresenting the state of evolutionary theory to the public, and they have become dismayed over how so many have misrepresented the strength of our arguments."[531]

16.2.2 Intelligent Design as Science, Not Theology

Joshua: Are intelligent design theorists not really doing science? Is ID theory religion masquerading as science?

G. Kemper, H. Kemper, & Luskin: "The scientific method was developed to allow an unhindered empirical search for truth. Nothing in its procedures prohibits experimental results from pointing

[525] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 29.
[526] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 7.
[527] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 230.
[528] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 231.
[529] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 30.
[530] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 239.
[531] Brian Miller, "The Intelligent Design Underground and Other Reflections," *Science and Culture Today*, December 28, 2018, https://scienceandculture.com/2018/12/the-intelligent-design-underground-and-other-reflections/ : accessed October 29, 2025.

toward any testable conclusion—including intelligent design."[532]

Gonzalez & Richards: "Design plays an important role in a number of other specialized sciences, such as forensics, fraud detection, cryptography . . . , and notably, SETI. Individuals are sentenced to life in prison or execution on the basis of a scientific judgment that a death was the result of criminal design rather than mere accident. And everyone assumes that, at least in principle, SETI researchers will be able to sift out intelligent extraterrestrial radio signals from background radio noise."[533]

"SETI seeks real evidence, which, if detected, would persuade most open-minded people of the existence of extraterrestrial intelligence."[534]

G. Kemper, H. Kemper, & Luskin: "Some might argue about the project's goals, but few would say it is unscientific."[535]

Rammerstorfer: "If detecting design is a legitimate scientific endeavor with respect to one aspect of observable reality (signals from space), then the same applies to another area (the world of organisms). Anything else would be evidence of double standards."[536]

G. Kemper, H. Kemper, & Luskin: "If we can detect design in other scientific fields, why should it be controversial when we detect it in biology or cosmology?[537]

Hartwig & Meyer: "Archaeologists routinely distinguish manufactured objects (eg., arrowheads, potsherds) from natural ones (eg., stones), even when the differences between them are very subtle. These manufactured objects then become important clues in reconstructing past ways of life But if we arbitrarily assert that science explains solely by reference to natural laws, if archaeologists are prohibited from invoking an intelligent manufacturer, the whole archaeological enterprise comes to a grinding halt."[538]

Gonzalez & Richards: "Designed objects tend to have what Del Ratzsch calls counterflow. They contrast with the way nature will go if left to operate freely. If events or objects are designed, they will stand out in relief against the background of nature's normal structures and activities. This counterflow was at least partly the reason that the lunar colonists in [Arthur C. Clarke and Stanley Kubrick's 1968 sci-fi masterpiece, *2001: A Space Odyssey*] identified the monolith as an artifact rather than, say, a geometrically gifted rock. Typical rocks tend to have a more, well, 'natural' shape."[539]

G. Kemper, H. Kemper, & Luskin: "Archaeologists discriminate between rock formations that have

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[532] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 225.
[533] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), 294.
[534] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), xii.
[535] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 248.
[536] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 113. Quoted passage translated from German.
[537] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 18.
[538] Mark D. Hartwig and Stephen C. Meyer, "A Note to Teachers," in Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 158.
[539] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), 300–301.

been shaped by natural geological forces and those shaped by intelligence."[540]

Hartwig & Meyer: "Imagine trying to explain Mt. Rushmore [without] reference to sculptors. Law-like explanations involving only natural processes would completely miss the critical explanatory factor. That is why archaeologists, forensic scientists and historians often find it impossible to avoid postulating intelligent agency."[541]

Johnson: "Scientific empiricists, as I use the term, hold that there are *three* kinds of causes to be considered rather than only two. Besides chance and law, there is also agency, which implies intelligence. Intelligence is not an occult entity, but a familiar aspect of everyday life and scientific practice. No one denies that such common technological artifacts as computers and automobiles are the product of intelligence, nor does anyone claim that this fact removes them from the territory of science and into that of religion."[542]

Dembski: "Hardly a dubious innovation, Intelligent Design formalizes and makes precise something we do all the time. All of us are all the time engaged in a form of rational activity which, without being tendentious, can be described as inferring design. Inferring design is a perfectly common and well-accepted human activity. People find it important to identify events that are caused through the purposeful, premeditated action of an intelligent agent, and to distinguish such events from events due to either law or chance. Intelligent Design unpacks the logic of this everyday activity, and applies it to questions in science. There's no magic, no vitalism, no appeal to occult forces here. Inferring design is widespread, rational, and objectifiable."[543]

Meyer: "When I present the evidence for intelligent design, critics do not typically try to dispute my specific empirical claims. They do not dispute that DNA contains specified information, or that this type of information always comes from a mind, or that competing materialistic theories have failed to account for the DNA enigma. Nor do they even dispute my characterization of the historical scientific method or that I followed it in formulating my case for intelligent design as the best explanation for the evidence. Instead, critics simply insist that intelligent design 'is just not science,' sometimes even citing Judge Jones as their authority."[544]

G. Kemper, H. Kemper, & Luskin: "One of the main strategies of materialists is to define the rules of the debate so that ID is disqualified. In essence, they want to win the debate without actually having one."[545]

DeWolf, West, & Luskin: "Judge Jones's attempt to decide whether ID is science exhibits poor legal

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[540] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 18.
[541] Mark D. Hartwig and Stephen C. Meyer, "A Note to Teachers," in Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 158.
[542] Phillip E. Johnson, "The Wedge: Breaking the Modernist Monopoly on Science," *Access Research Network*, 1999, https://arn.org/docs/johnson/le_wedge.htm : accessed 26 December 2025.
[543] William A. Dembski, "The Explanatory Filter: A Three-Part Filter for Understanding How to Separate and Identify Cause from Intelligent Design," *Access Research Network*, 1996, https://www.arn.org/docs/dembski/wd_explfilter.htm : accessed 12 January 2026.
[544] Stephen C. Meyer, "Sauce for the Goose: Intelligent Design, Scientific Methodology, and the Demarcation Problem," 15 February 2011, https://stephencmeyer.org/2011/02/15/sauce-for-the-goose/ : 12 November 2025.
[545] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 221.

reasoning."[546]

"Eighty-five scientists—including professors from the University of Georgia, the University of Michigan, and the University of Iowa, as well as a member of the National Academy of Sciences— filed an amicus brief imploring the court not to assume that scientific questions could be resolved by judicial decree."[547]

Lönnig: "If – as in the case of the Synthetic Theory of Evolution (NeoDarwinism) – a theory which is essentially unverifiable, non-falsifiable and non-quantifiable, in which 'chance' (from mutation to historical contingency) occupies a significant place, and in which, moreover, the fundamental non-reproducibility of the postulated main events and results (macroevolution) as well as the unpredictability of future evolution are integral parts of the doctrine, and this theory is recognized as **lying *within* the field of natural science, *how much more does testable design theory belong to natural science and especially to biology!***"[548]

"After more than 200 years of fruitless evolutionary speculations (beginning with Lamarck in 1809) . . . , it is no longer comprehensible why the intelligent design hypothesis (ID) should, for the question of the origin of the living world, continue to be ruled out on principle. The main objection, that ID is not scientifically testable, has long been refuted."[549]

Behe: "If I think it is implausible that the cause of the Big Bang was natural, as I do, that does not make the Big Bang Theory a religious one, because the theory is based on physical, observable data and logical inferences. The same is true for ID."[550]

DeWolf, West & Luskin: "Advocates of ID have never denied that the science of ID has implications for religious belief. Indeed, one reason for the intense interest in this area for many people is that the answers to the scientific questions have larger implications for philosophy, theology, and culture. . . . Religious implications drawn from conflicting answers to the scientific question do not render the original question (whether design is actual or illusory) any less scientific. Neither Darwinism nor ID is rendered unscientific because some proponents of each theory passionately advocate philosophical, theological, or cultural positions that are believed to follow from their respective answers to the

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[546] David K. DeWolf, John G. West, and Casey Luskin, *Intelligent Design Will Survive Kitzmiller v. Dover*, *Montana Law Review* 68, no. 1 (2007), 42 [PDF p. 36]; digital file, https://www.discovery.org/m/securepdfs/2021/03/Intelligent-Design-Will-Survive-Kitzmillerv.Dover-DeWolf-West-Luskin.pdf : accessed 12 November 2025.

[547] David K. DeWolf, John G. West, and Casey Luskin, *Intelligent Design Will Survive Kitzmiller v. Dover*, *Montana Law Review* 68, no. 1 (2007), 13 [PDF p. 7]; digital file, https://www.discovery.org/m/securepdfs/2021/03/Intelligent-Design-Will-Survive-Kitzmillerv.Dover-DeWolf-West-Luskin.pdf : accessed 12 November 2025.

[548] Wolf-Ekkehard Lönnig, *Die Evolution der karnivoren Pflanzen: Was die Selektion nicht leisten kann – das Beispiel Utricularia (Wasserschlauch)*, 3rd improved edition (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2012), 157 [PDF p. 171]; digital file, https://www.weloennig.de/Utricularia2011Buch.pdf : accessed 9 December 2025. Quoted passage translated from German.

[549] Wolf-Ekkehard Lönnig, *The Evolution of the Long-Necked Giraffe (Giraffa camelopardalis L.): What Do We Really Know? Testing the Theories of Gradualism, Macromutation, and Intelligent Design* (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2011), 60 [PDF p. 72]; digital file, https://ad-multimedia.de/evo/long-necked-giraffe_mU.pdf : accessed 4 November 2025.

[550] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 483–484. Page numbers reflect the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "if I think"; for print readers, the page range provides approximate placement.

scientific question."[551]

Dembski: "Intelligent design is the science that studies signs of intelligence. Note that a sign is not the thing signified. . . . As a scientific research program, intelligent design investigates the effects of intelligence and not intelligence as such."[552]

Behe: "A fundamental facet of rationality is our ability to discern the existence of other minds. . . . In our world we perceive other minds through their physical effects. A theory which arbitrarily rules out mind as an explanation for certain physical effects has abandoned a facet of reason. Abandoning a facet of reason leads ultimately to irrationality. . . . Life REEKS of Design."[553]

Meis: "You don't need precise information about time, place and person to have a testable theory. Often you don't know who was the builder of a building or the designer of a clay vessel that you have excavated. But you know there is intelligence behind it."[554]

Rammerstorfer: "Archaeologists sometimes come across things whose function and use they do not know. They also do not know who made them, or at least they do not know what thoughts the creator who made them had."[555]

Behe: "The conclusion that something was designed can be made quite independently of knowledge of the designer. As a matter of procedure, the design must first be apprehended before there can be any further question about the designer. The inference to design can be held with all the firmness that is possible in this world, without knowing anything about the designer."[556]

Rammerstorfer: "The '*Sounds of Earth'* recording—stored on gold-plated copper plates and mounted on the Voyager probes—was specifically built on the assumption that even an intelligence that doesn't know us would recognize the object as designed and even understand the precise intentions behind it."[557]

Meis: "Criminology is a typical field of application of intelligent design theory. . . . That it was a murder and not an accident is already a verifiable statement. The identity of the murderer as well as the motives for the crime and the course of events are not required for this."[558]

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[551] David K. DeWolf, John G. West, and Casey Luskin, *Intelligent Design Will Survive Kitzmiller v. Dover*, *Montana Law Review* 68, no. 1 (2007), 44 [PDF p. 38]; digital file, https://www.discovery.org/m/securepdfs/2021/03/Intelligent-Design-Will-Survive-Kitzmillerv.Dover-DeWolf-West-Luskin.pdf : accessed 12 November 2025.

[552] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 33.

[553] Michael Behe, *Should Intelligent Design Be Taught As Science? (Michael Behe vs Stephen Barr)*, YouTube video, 1:11:44, timestamp 2:55–3:56, posted by IDquest, https://www.youtube.com/watch?v=knEY1wKODR0 : accessed 22 December 2025.

[554] Karl Friederich Meis, "Kritikpunkt 4," *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, last updated 11 June 2022, https://www.intelligentdesigner.de/kritikpunkt-4/ : accessed 26 August 2025. Quoted passage translated from German.

[555] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 98. Quoted passage translated from German.

[556] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 197.

[557] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 99–100n19. Quoted passage translated from German.

[558] Karl Friederich Meis, "Kritikpunkt 4," *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, last updated 11 June 2022, https://www.intelligentdesigner.de/kritikpunkt-4/ : accessed 26 August 2025. Quoted passage translated from German.

Rammerstorfer: "SETI researchers . . . do not know what signals to expect from an extraterrestrial intelligence—how could they? They know neither its thoughts nor its capabilities. Nevertheless, no one doubts that an extraterrestrial, non-human intelligence can, in principle, be detected as soon as it intervenes in the environment in a planned manner."[559]

D. Johnson: "That [the] book [*Probability's Nature and Nature's Probability: A call to Scientific Integrity*] was designed can easily be verified by science, which would be true if the author were born as a normal human, transplanted from an alien planet, or existed forever. The identity of the designer is a separate issue from the detectability of design. The mechanism of design implementation is also a separate issue; e.g. did [the] author use a keyboard, a voice recognition device, a secretary, or mental telepathy during the book's creation?"[560]

Lönnig & Meis: "If one finds a book on a remote island, then one knows — entirely without scientific analysis of the book in a laboratory and without having to be a religious person — that it must be of intelligent origin, even if no intelligent being is to be seen anywhere far and wide. This has not only to do with the medium of books, as if one knew from experience that intelligent beings make books. It is also due to the information-bearing code."[561]

Gage: "ID is a minimal scientific project seeking to detect design in the natural world. . . . They are trying to identify designed objects."[562]

Woodward: "There is no 'Made by Yahweh' engraved on the side of the bacterial rotary motor—the *flagellum*. In order to find out what or who its designer is, one must go outside the narrow discipline of biology."[563]

Lönnig: "In my view, to rationally identify the designer with the God of the Bible, further studies are necessary, for example: Biblical archaeology, fulfilled prophecy, ethics, and much more (I would need much time to adequately sum up the many more points)."[564]

"The question of whether we identify the intelligent designer with God depends on our overall view of the world."[565]

Luskin: "The refusal of ID proponents to draw scientific conclusions about the nature or identity of the

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[559] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 99. Quoted passage translated from German.

[560] Donald E. Johnson, *Probability's Nature and Nature's Probability: A Call to Scientific Integrity* (Charleston, SC and Lexington, KY: BookSurge Publishing, updated October 2010), 89.

[561] Wolf-Ekkehard Lönnig and Frieder Meis, "Intelligent Design (ID) liefert wissenschaftliche Erklärungen: Methodologische Bemerkungen zu einem klaren Verhältnis (Erste Diskussionsrunde)," *Religion – Staat – Gesellschaft: Journal for the Study of Beliefs and Worldviews*, vol. 7, no. 2 (2006) (published 25 May 2007), https://www.weloennig.de/RSGID1.html : accessed 12 November 2025. Quoted passage translated from German.

[562] Logan Paul Gage, "Fortey's Ego and the ID," *Science and Culture Today*, February 14, 2007, https://scienceandculture.com/2007/02/forteys_ego_and_the_id/ : accessed October 29, 2025.

[563] Thomas Woodward, *Darwin Strikes Back: Defending the Science of Intelligent Design* (Grand Rapids, MI: Baker Books, 2006), 15.

[564] Wolf-Ekkehard Lönnig, *Wolf-Ekkehard Lönnig to Prof. ABX* (posted 23/24 March 2021), 4; digital file, https://www.weloennig.de/BirdOfParadise.pdf : accessed 12 November 2025.

[565] Wolf-Ekkehard Lönnig, correspondence to Prof. U (pseudonym), 30 October 2001, published in *Ein paar offene Fragen der Evolutionstheorie sowie theologische Einwände von Evolutionstheoretikern zum Thema Intelligent Design*, https://www.weloennig.de/OffeneFragenEvol.html : accessed 17 November 2025. Quoted passage translated from German.

designer is principled rather than merely rhetorical."[566]

Thaxton: "It is easy to see how the critic might think intelligent cause is a ruse, for surely the cause might be supernatural. The problem is that we do not know from the inference we make from experience of DNA (and protein) whether the intelligence is beyond the cosmos, or within it. These prepositions 'beyond' and 'within' make all the difference. Because we do not know from the inference itself which preposition truly represents the case, we must remain equivocal. That is why we must simply refer to intelligent cause."[567]

G. Kemper, H. Kemper, & Luskin: "In the debate over ID, those who raise questions about the supernatural are often attempting to shut down the discussion by refusing to address the evidence."[568]

Luskin: "Within biology, ID theorists have been very clear that design only allows you to appeal to an intelligent cause. The biological data alone do not allow you to identify the designer. A physics-based argument for design may extend the argument further and suggest a designer who could fine-tune the laws of the universe, and who exists outside of the universe. True, many people identify the designer as God, but ID as a science is not an attempt to 'prove' that 'God' exists."[569]

Meyer: "As it happens, I do think explaining the full range of scientific evidence . . .—from astronomy and cosmology to physics *and* biology—points to a transcendent designer with the attributes—'the skill set'—that theists ascribe to God. . . .

". . . The evidence of design in life, taken by itself, does not *necessarily* point to a transcendent intelligence (or God)."[570]

Luskin: "Even when it comes to cosmic design, however, to call the designer 'God' is to provide a specific identity of the designer which goes beyond what the scientific data alone can tell us. Thus, if you go so far as to appeal to 'God,' you're going beyond what can be learned by a strictly scientific study of the evidence, and since the theory of intelligent design uses scientific methods, you're going to go beyond what ID strictly defined can tell you."[571]

"ID's non-identification of the designer isn't a 'policy' or a 'strategy,' but rather it's something that just flows out of ID's choice to take a scientific approach, rather than a theological one.

"None of this is new for the ID movement. In fact a review of early ID literature shows that this has

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[566] Casey Luskin, "Correcting Kirk Fithzhugh's Misunderstandings About Intelligent Design," *Science and Culture Today*, November 3, 2010, https://scienceandculture.com/2010/11/correcting_kirk_fithzhughs_mis/ : accessed October 29, 2025.
[567] Charles Thaxton, "A New Design Argument," *Discovery Institute*, 1 September 1994, https://www.discovery.org/a/137/ : accessed 29 October 2025.
[568] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 21.
[569] Casey Luskin, "New 'Three Views' Book Explores the Relationship of Faith and Science," *Science and Culture Today*, May 20, 2021, https://scienceandculture.com/2021/05/new-three-views-book-explores-the-relationship-of-faith-and-science/ : accessed October 29, 2025.
[570] Stephen C. Meyer, *Return of the God Hypothesis: Three Scientific Discoveries That Reveal the Mind Behind the Universe* (New York: HarperOne, 2021), 260.
[571] Casey Luskin, "Answering Another Objection to Intelligent Design: 'You Can't Prove God Exists,'" *Science and Culture Today*, February 22, 2021, https://scienceandculture.com/2021/02/answering-another-objection-to-intelligent-design-you-cant-prove-god-exists/ : accessed October 29, 2025.

been ID's approach from the very beginning."[572]

"Critics of intelligent design often accuse ID proponents of using a 'god of the gaps' argument, but they refuse to acknowledge that . . . ID requires no inference to 'God.'"[573]

Durston: "A 'God of the gaps' argument always contains the following premise, either explicit or assumed: **'God of the gaps' premise:** If we don't know what produced 'X,' then God did it."[574]

Luskin: "I'm very open that I believe the designer is the God of the Bible, and if you read the writings of many other leading ID proponents, it isn't hard to discern their personal beliefs either. But nobody who understands ID would say that such claims about the identity of the designer are the conclusions of ID."[575]

"It's worth noting that not all ID proponents identify the designer as God. For example, in 2004 UCLA neuroscientist Jeffrey Schwartz spoke in favor of intelligent design, and he identified himself as a 'Buddhist Jew.' The philosopher Antony Flew provides another notable example of an ID-proponent who is not a traditional theist. And I have other colleagues in the ID movement who are entirely agnostic about the identity of the designer."[576]

Dembski: "Intelligent design has theological implications, but that does not make it a theological enterprise. . . . Design theorists attempt to demonstrate its merits fair and square in the scientific world—without appealing to religious authority. The fundamental claim of intelligent design is straightforward and easily intelligible: namely, *there exist natural systems that cannot be adequately explained in terms of undirected natural causes and that exhibit features which in any other circumstance we would attribute to intelligence*. That claim can be considered on its own merits. Let's go to nature, identify some natural systems, analyze them and see whether the analysis leads us to design.

"Do certain types of natural systems exhibit clear hallmarks of intelligence? . . . Instead of encouraging a fair scientific assessment of it, critics of intelligent design often do everything in their power to delegitimize this question so that it cannot receive a fair hearing within the scientific community. Rather than help assess the merit of intelligent design as a scientific project, they relegate it to the 'safe' realms of religion and theology, where it can't cause any trouble."[577]

16.2.3 The Theological and Religious Dimensions of Darwinism

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[572] Casey Luskin, "Why Doesn't Intelligent Design Identify the Designer?" *Science and Culture Today*, June 30, 2015, https://scienceandculture.com/2015/06/why_doesnt_inte/ : accessed October 29, 2025.
[573] Casey Luskin, "The Self-Refuting 'God of the Gaps' Critique," *Science and Culture Today*, October 18, 2012, https://scienceandculture.com/2012/10/the_self-refuti/ : accessed October 29, 2025.
[574] Kirk Durston, "A Scientific Method for Design Detection," *Science and Culture Today*, August 2, 2019, https://scienceandculture.com/2019/08/a-scientific-method-for-design-detection/ : accessed October 29, 2025.
[575] Casey Luskin, "The Identity of the Designer: How to Avoid an Incoherent Criticism of Intelligent Design," *Science and Culture Today*, December 2, 2011, https://scienceandculture.com/2011/12/the_identity_of/ : accessed October 29, 2025.
[576] Casey Luskin, "Principled (not Rhetorical) Reasons Why Intelligent Design Doesn't Identify the Designer," *Discovery Institute*, 31 October 2007, https://www.discovery.org/a/4306/ : accessed 29 October 2025.
[577] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 45.

Dilley & Tafacory: "From the *Origin* to the present, biologists have repeatedly invoked God-talk as part of their positive case for evolutionary theory. If theology is barred (or ignored), then this array of justifications goes by the wayside. . . .

". . . A number of prominent biologists rely on theology in their scientific case for evolution in the present day. . . . Their theology-laden arguments appear in major areas of biology, including genetics, embryology, biogeography, paleontology, physiology, genomics, and the like. . . .

". . . We briefly note that several studies have brought to light notable features of these arguments. First, these studies collectively show that the biologists who make these arguments overwhelmingly view them as scientific—no doubt because they draw on scientific data, inferences, patterns of reasoning, and peer-reviewed research. Second, these theological claims are typically indispensable to the arguments in which they appear. Without God-talk, the arguments in question do not support evolutionary theory. Third, these arguments are often central to a given thinker's overall scientific case for evolution. Indeed, some of these thinkers' self-reported *best* arguments for evolution depend on God-talk."[578]

"In their opening chapters, many textbook authors prohibit the incursion of religious claims into science, then, in their 'evidence for evolution' chapters, they permit religious claims back into science for the purpose of bolstering evolutionary theory. Theological claims are barred—except when they are not. This . . . is incoherent."[579]

Woodward: "[Darwinism] is profoundly theological in its basic operating rules, in that it lays down an *assured truth*—an axiom that amounts to a rigid religious catechism. It is this catechism then that serves as a starting point. The Darwinian catechism states that when scrutinizing complex living systems, one can rest assured that scientific evidence and logic can never lead one to conclude that there was an intelligent cause behind life."[580]

Johnson: "With Darwinian evolution, we're dealing with something that's much more than a scientific theory. It's a creation story. . . . The Darwinian story says that ultimately all that's real is nature."[581]

Durston: "Scientific literature reveals an unshakable belief that evolution can do the wildest, most improbable things tens of thousands of times over. Consequently, I believe Darwinism has become a religion, specifically a modern form of pantheism, where nature performs thousands of miracles — none of which can be reproduced in a lab."[582]

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[578] Stephen Dilley and Nicholas Tafacory, "Damned if You Do and Damned if You Don't: The Problem of God-talk in Biology Textbooks," *Communications of the Blyth Institute* 1, no. 2 (2019): orig. pp. 59–60 / PDF pp. 23–24, https://journals.blythinstitute.org/ojs/index.php/cbi/article/view/44/44 : accessed 10 November 2025. The PDF facsimile is accessible via DOI https://doi.org/10.33014/issn.2640-5652.1.2.dilley.1

[579] Stephen Dilley and Nicholas Tafacory, "Damned if You Do and Damned if You Don't: The Problem of God-talk in Biology Textbooks," *Communications of the Blyth Institute* 1, no. 2 (2019): orig. p. 63 / PDF p. 27, https://journals.blythinstitute.org/ojs/index.php/cbi/article/view/44/44 : accessed 10 November 2025. The PDF facsimile is accessible via DOI https://doi.org/10.33014/issn.2640-5652.1.2.dilley.1

[580] Thomas Woodward, *Darwin Strikes Back: Defending the Science of Intelligent Design* (Grand Rapids, MI: Baker Books, 2006), 52–53.

[581] Phillip E. Johnson, response to question 1, "Define 'Darwinian evolution' and the philosophy of 'materialism,'" bonus feature "Darwin & Design: Questions & Answers," in *Unlocking the Mystery of Life: The Scientific Case for Intelligent Design*, directed by Lad Allen and Timothy Eaton (La Mirada, California: Illustra Media, 2002), DVD.

[582] Kirk Durston, "Probability Mistakes Darwinists Make," *Science and Culture Today*, April 5, 2016, https://scienceandculture.com/2016/04/probability_mis/ : accessed 12 January 2026.

Wells: "Darwinism has all the trappings of a secular religion. Its priests forgive a multitude of sins in their postulants — manipulating data, overstating results, presenting assumptions as though they were conclusions — but never the sin of disbelief."[583]

Behe: "Lynn Margulis says that history will ultimately judge neo-Darwinism as 'a minor twentieth-century religious sect within the sprawling religious persuasion of Anglo-Saxon biology.'"[584]

Carson: "Historically . . . [in] the world of science, you can find some pretty outlandish things that were thought to be 'The Word.'"[585]

Lönnig: "If . . . today's theories of evolution cannot scientifically, i.e. testably, answer the fundamental questions about the origin of new synorganized structures and systems and insistently still demand scientific acceptance with great trust and confidence ('evolution is not a theory; it is a fact'), then, where is the difference between an arbitrary request of faith without proof, being on the same level as the opinionated insistence of many churches to accept their respective dogmata?"[586]

16.2.4 Distinguishing Intelligent Design from Creationism

Behe: "'Creationist' has a lot of negative emotional resonance in many intellectual circles, so it makes a fellow's rhetorical task a lot easier if he can tag his intellectual opponent with the label."[587]

G. Kemper, H. Kemper, & Luskin: "Some critics try to link ID to creationism simply by using the label 'intelligent design creationism' or by talking about 'creationists' while attacking ID."[588]

Meyer: "In the science world, as in the media, 'creationist' is a dirty word. . . . Such attempts to stigmatize results that challenge a favored theory illustrate how an ideological monopoly in science can stifle inquiry and discussion."[589]

Rammerstorfer: "The term [creationism] is often sufficient to serve as the final nail in the coffin of any constructive conversation or discussion, and sometimes, incidentally, one gets the impression that

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[583] Jonathan Wells, "Critics Rave Over *Icons of Evolution*: A Response to Published Reviews," *Discovery Institute*, 12 June 2002, https://www.discovery.org/a/1180/ : accessed 29 October 2025.
[584] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 26.
[585] Ben Carson, quoted in Tessa Rath, "Dr. Ben Carson on Darwinian Dogma and the DNA/Software Analogy," *Science and Culture Today*, 2 July 2012, https://scienceandculture.com/2012/07/dr_ben_carson_o/ : accessed 29 October 2025.
[586] Wolf-Ekkehard Lönnig, *The Deceptive Flowers of Orchids and Evolution by Natural Selection: Or How More than Eight Thousand Beautiful Facts are Slaying an Ugly Hypothesis: Darwinism. Part II: Intelligent Design* (self-published, 31 July and 8 August 2018; with supplement, 23/24 August 2018), 4; digital file, https://www.weloennig.de/BeautifulFactsPartII.pdf : accessed 12 November 2025.
[587] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 69. Page number reflects the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "creationist has"; for print readers, the page number provides approximate placement.
[588] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 225.
[589] Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (New York: HarperOne, 2013), 401.

this is precisely what the use of the term is intended to do."[590]

Luskin: "No matter how often Darwinists might say otherwise, the fact of the matter remains that ID was first promoted as a legitimate scientific alternative to Darwinism that had key differences from creationism."[591]

"In a desperate effort to tie ID to creationism, Darwinists resort to weak semantic or 'guilt by association' arguments, rather than substantive arguments, to claim that ID is creationism."[592]

G. Kemper, H. Kemper, & Luskin: "If a creationist and an ID proponent ever talk about the same topic, then ID must be creationism. This is like saying that if dogs and cats both eat meat, then dogs are cats."[593]

Meis: "Many evolutionary theorists deliberately lump intelligent design theory and creationism together. They then attack creationism with thoroughly scientific arguments and act as if the intelligent design theory had also been refuted in this way."[594]

Gage: "ID is not creationism–and no one is more vociferously insistent about this than the major creationist organizations like Answers In Genesis."[595]

Witt: "Critics of the theory of intelligent design often assert that it is simply a re-packaged version of creationism, and that it began after the Supreme Court struck down the teaching of creationism in *Edwards v. Aguillard* in 1987."[596]

Meyer: "[The modern theory of intelligent design] was first formulated in the late 1970s and early 1980s by a group of scientists-Charles Thaxton, Walter Bradley, Roger Olson, and Dean Kenyon-who were trying to account for an enduring mystery of modern biology: the origin of the digital information encoded along the spine of the DNA molecule."[597]

Lennox: "'Creationism' used to denote simply the belief that there was a Creator. However, it has now come to mean not only belief in a Creator but also a commitment to a whole additional raft of ideas by far the most dominant of which is a particular interpretation of Genesis which holds that the earth is only a few thousand years old. This mutation in the meaning of 'creationism' or 'creationist' has had

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[590] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 4. Quoted passage translated from German.
[591] Casey Luskin, "What Is Wrong with Sober's Attack on ID? (Part I): Defining ID and Its Historical Origins," *Science and Culture Today*, March 21, 2007, https://scienceandculture.com/2007/03/what_is_wrong_with_sobers_atta/ : accessed October 29, 2025.
[592] Casey Luskin, "ID Does Not Address Religious Claims About the Supernatural," *Discovery Institute*, 8 September 2008, https://www.discovery.org/a/7501/ : accessed 29 October 2025.
[593] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 225.
[594] Karl Friederich Meis, "Kritikpunkt 2," *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, last updated 11 June 2022, https://www.intelligentdesigner.de/kritikpunkt-2/ : accessed 26 August 2025. Quoted passage translated from German.
[595] Logan Paul Gage, "A Stealth Creationist Theory' Which Is Neither Stealth Nor Creationist: Discuss!" *Science and Culture Today*, August 9, 2007, https://scienceandculture.com/2007/08/a_stealth_creationist_theory_w/ : accessed October 29, 2025.
[596] Jonathan Witt, "The Origin of Intelligent Design," *Discovery Institute*, 30 October 2007, https://www.discovery.org/a/3207/ : accessed 29 October 2025.
[597] Stephen C. Meyer, "Not By Chance: From Bacterial Propulsion Systems to Human DNA, Evidence of Intelligent Design Is Everywhere," December 1, 2005, https://stephencmeyer.org/2005/12/01/not-by-chance/ : accessed 13 November 2025.

three very unfortunate effects. First of all it polarizes the discussion and gives an apparently soft target to those who reject out of hand any notion of intelligent causation in the universe. Secondly, it fails to do justice to the fact that there is a wide divergence of opinion on the interpretation of the Genesis account even among those Christian thinkers who ascribe final authority to the biblical record. Finally, it obscures the (original) purpose of using the term 'intelligent design', which is to make a very important distinction between the recognition of design and the identification of the designer."[598]

Lönnig: "ID starts its research from a biological object, creationism from the viewpoint of a special interpretation of the Genesis record."[599]

"ID tries to distinguish as precisely as possible between coincidence, necessity and intelligent design in nature using scientific methods alone. . . . Creationists have sharply criticized the clear ID differentiation between science and religion."[600]

G. Kemper, H. Kemper, & Luskin: "Intelligent design is different from creationism because it begins with our observations of nature rather than the Bible."[601]

"Some who argue in favor of a 'Young Earth' viewpoint may dismiss ID because:

- ID is based solely on an examination of the scientific evidence, and
- ID finds evidence for design from scientific data that implies the universe is billions of years old."[602]

Lönnig: "I would add a word on the fears of so many critics that accepting ID also means accepting the dogmata of some 1700 years of church history. ID is thoroughly neutral concerning such topics."[603]

Behe: "The conclusion of intelligent design flows naturally from the data itself—not from sacred books or sectarian beliefs."[604]

Lönnig: "The scientific Intelligent Design theory is in no way tied to any denomination."[605]

DeWolf, Meyer, & DeForrest: "The propositional content of design theory differs significantly from

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[598] John C. Lennox, *God's Undertaker: Has Science Buried God?* (Oxford: Lion Books, 2009), 11.

[599] Wolf-Ekkehard Lönnig, *The Deceptive Flowers of Orchids and Evolution by Natural Selection: Or How More than Eight Thousand Beautiful Facts are Slaying an Ugly Hypothesis: Darwinism. Part I* (self-published, 26 July and 8 August 2018), 19; digital file, https://www.weloennig.de/BeautifulFactsPartI.pdf : accessed 12 November 2025.

[600] Wolf-Ekkehard Lönnig, *Synthetische Evolutionstheorie vs. Intelligent Design* (2003), https://www.weloennig.de/KutscheraWiderlegung1.html : accessed 13 November 2025. Quoted passage translated from German.

[601] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 21.

[602] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 39.

[603] Wolf Ekkehard Lönnig, endorsement in Matti Leisola and Jonathan Witt, *Heretic: One Scientist's Journey from Darwin to Design* (Seattle: Discovery Institute Press, 2018), unnumbered front matter, preceding table of contents.

[604] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 193.

[605] Wolf-Ekkehard Lönnig, *Conflicting Criticisms by Evolutionists and Creationists Against My Humble Self on the Identification of the Designer* (Cologne: self-published, 17 April 2015; update 26 May 2015), 9; digital file, https://www.weloennig.de/HumbleSelf_ABC.pdf : accessed 13 December 2025. Quoted passage translated from German.

that of scientific creationism. . . .

"Design theory . . . asserts the following:

> (1) High information content (or specified complexity) and irreducible complexity constitute strong indicators or hallmarks of past intelligent design.
> (2) Biological systems have a high information content (or specified complexity) and utilize subsystems that manifest irreducible complexity.
> (3) Naturalistic mechanisms or undirected causes do not suffice to explain the origin of information (specified complexity) or irreducible complexity.
> (4) Therefore, intelligent design constitutes the best explanation for the origin of information and irreducible complexity in biological systems."[606]

Woodward: "The year 1999 can be marked as a turning point—the year that a major Darwinist counteroffensive began."[607]

". . . ID was described as differing in only minor points with the older ideas of 'scientific creationism.' . . . Without exception, defenders of Darwinism sought rhetorical advantage by this *lumping in* tactic. . . . ID theory does not depend upon a single biblical or religious premise."[608]

Johnson: "[Darwinists'] literature continues to promote the view that the only dissenters from Darwinism are religious fundamentalists who don't know about the overwhelming evidence that proves that 'evolution has occurred.' This caricature of the opposition works only with people who have never heard the dissenting arguments firsthand."[609]

Wells: "Some dogmatic Darwinists have been very effective at shoring up their monopoly by playing on the fear of religious fundamentalism. Darwinism is indispensable, we are told, because it protects us from religious fanatics who might impose a suffocating orthodoxy on science. Ironically, these people 'protect' science from religious dogmatism by imposing a dogmatism of their own."[610]

Johnson: "We who are willing to consider evidence for ID . . . think of ourselves as the true empiricists and hence the true practitioners of scientific thinking. From our standpoint it is the materialists who are the 'fundamentalists,' in the pejorative sense of the term, because they adhere to a metaphysical dogma in the teeth of contrary scientific evidence."[611]

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[606] David K. DeWolf, Stephen C. Meyer, and Mark E. DeForrest, "Teaching the Controversy: Darwinism, Design and the Public School Science Curriculum," http://guweb2.gonzaga.edu/~dewolf/fte2.htm : accessed 16 May 2025.
[607] Thomas Woodward, *Darwin Strikes Back: Defending the Science of Intelligent Design* (Grand Rapids, MI: Baker Books, 2006), 43.
[608] Thomas Woodward, *Darwin Strikes Back: Defending the Science of Intelligent Design* (Grand Rapids, MI: Baker Books, 2006), 45.
[609] Phillip E. Johnson, "The Wedge: Breaking the Modernist Monopoly on Science," *Access Research Network*, 1999, https://arn.org/docs/johnson/le_wedge.htm : accessed 26 December 2025.
[610] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 244–245.
[611] Phillip E. Johnson, "The Wedge: Breaking the Modernist Monopoly on Science," *Access Research Network*, 1999, https://arn.org/docs/johnson/le_wedge.htm : accessed 26 December 2025.

Lönnig: "***Science thrives on objective criticism and not on dogmatism that suppresses facts.***"[612]

West: "Darwinism has functioned as an ideological orthodoxy, and it has preserved its power not by evidence or persuasion but largely by bullying others and immunizing itself from critical scrutiny."[613]

16.2.5 Fallacies, Motive-Mongering, and the Suppression of Scientific Debate

Meyer: "In public debates, I've often encountered critics of intelligent design who quote design advocates acknowledging their religious beliefs as a way to discredit the case for the design hypothesis. Though this happens frequently, I'm always a bit surprised that scientists and especially professional philosophers (who have presumably taught logic) would resort to such fallacious motive-mongering."[614]

Luskin: "When assessing whether a given claim is scientific, all that matters is that an empirically-based scientific methodology of knowing is given to back the claim. Alleging that a claim is religious and unscientific because of (a) the larger philosophical implications of the claim, (b) the religious beliefs of the claimant, (c) the motives of the claimant, or (d) some historical relationship between certain types of religious persons and that claim uses an irrelevant argument. Evolutionists should consider this carefully because intelligent design and evolution are methodologically equivalent: Any argument invoking (a) through (d) to disqualify intelligent design from being science would similarly disqualify evolution from being science, if the facts and the argument were applied fairly."[615]

Meyer: "It's not what motivates a scientist's theory that determines its merit, status, or standing; it's the quality of the arguments and the relevance of the evidence marshaled in support of a theory. Even if all the scientists who have advocated the theory of intelligent design were motivated by religious belief (and they are not), motives don't matter to science. Evidence does. To say otherwise commits an elementary logical fallacy known as the genetic fallacy, in which an alleged defect in the source or origin of a claim is taken to be evidence that discredits the claim."[616]

Lönnig: "Many 'Darwinists' from 1900 to about 1937 rejected the 'rediscovered' laws of heredity, partly because of Mendel's religious motivation. However, this period is now considered one of the most astonishing aberrations in the history of science."[617]

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[612] Wolf-Ekkehard Lönnig, correspondence to Mr. Q (pseudonym), 15 November 1998, published in "4) Gregor Mendel, Archaeopteryx und die Giraffe," in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/Giraffe.html : accessed 4 November 2025. Quoted passage translated from German.

[613] John G. West, "At Conference in Venice, Scientists Discuss Challenges to Darwin, Past and Future," *Science and Culture Today*, 13 October 2025, https://scienceandculture.com/2025/10/at-conference-in-venice-scientists-discuss-challenges-to-darwin-past-and-future/ : accessed 29 October 2025.

[614] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 448.

[615] Casey Luskin, "Response to Barbara Forrest's ***Kitzmiller*** Account," *Discovery Institute*, 1 January 2007, https://www.discovery.org/a/4207/ : accessed 29 October 2025.

[616] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 447.

[617] Wolf-Ekkehard Lönnig, *Synthetische Evolutionstheorie vs. Intelligent Design*, (2003), https://www.weloennig.de/KutscheraWiderlegung1.html : accessed 13 November 2025. Quoted passage translated from German.

Joshua: Not to change the subject, but what were the other reasons Mendelian genetics was rejected?

Lönnig: "When Mendel's laws became known to wide circles of science and research at the beginning of the 20th century, numerous Darwinists fought against the increasing recognition of these scientific laws and facts, as they ran counter to all of Darwin's fundamental 'findings' (inheritance of acquired characteristics, 'blending inheritance', continuous evolution)."[618]

Luskin: "If critics want to harp upon the religious beliefs, motives, affiliations, and implications associated with ID, then they should realize that what's sauce for the goose is sauce for the gander. Leading proponents of neo-Darwinian evolution frequently discuss their views of the cultural and metaphysical implications of neo-Darwinian evolution. Moreover, many of them have expressed anti-religious beliefs and motives for advocating evolution, and have close ties to atheist and secular humanist organizations.

"When critics object to ID based upon the alleged religious motives, beliefs, or affiliations of its proponents, they make a highly hypocritical argument, for many leading Darwinists have blatantly anti-religious motives, beliefs, and affiliations."[619]

G. Kemper, H. Kemper & Luskin: "[Scientists'] personal religious or anti-religious views are irrelevant as long as they are making sound scientific claims."[620]

Luskin: "Attacking motives is one of the last defenses people fall back on when they sense they've got nothing better."[621]

Sewell: "For 150 years Darwinists have used 3 primary tactics to silence dissenters: question their credentials, question their motives and appeal to authority."[622]

Lönnig: "Around 150 years of Darwinist intolerance show that factually correct arguments have increasingly led to discrimination and defamation of people who submitted these scientific facts and arguments instead of verifying dubious positions."[623]

Woodward: "Seriously flawed rhetorical practices of Darwinists have started backfiring. I have in mind especially the prevalence of dumb-design, and other theological arguments, the widespread use of 'Just So Stories,' and the use of *ad hominem* attacks, the genetic fallacy, and 'poisoning the well' in

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[618] Wolf-Ekkehard Lönnig, "1) Gregor Mendel, der Wasserschlauch (Utricularia vulgaris) und die Evolution," in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/Utricularia.html : accessed 4 November 2025. Quoted passage translated from German.

[619] Casey Luskin, "Any Larger Philosophical Implications of Intelligent Design, or Any Religious Motives, Beliefs, and Affiliations of ID Proponents, Do Not Disqualify ID from Having Scientific Merit," *Discovery Institute*, 8 September 2008, https://www.discovery.org/a/7081/ : accessed 29 October 2025.

[620] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 227.

[621] Casey Luskin, "Defending the Science of Intelligent Design at the Seattle Analytic Philosophy Club," *Science and Culture Today*, November 29, 2012, https://scienceandculture.com/2012/11/defending_the_s/ : accessed October 29, 2025.

[622] Granville Sewell to Wolf-Ekkehard Lönnig, email, 26 July 2016, quoted in Wolf-Ekkehard Lönnig, *On the Limits of Natural Selection: The Original Article and all Relevant Posts as well as the Link to the Supplementary Podcast now in One Document* (Cologne, 31 July/4 August 2016), 38–39; digital file, weloennig.de/jfterrorchipmunks.pdf : accessed 7 November 2025.

[623] Wolf-Ekkehard Lönnig, *Reply to My Critics*, https://www.weloennig.de/Antwort_an_Kritiker.html : accessed 15 November 2025. Quoted passage translated from German.

assaults on ID."[624]

Lönnig: "***Personal disparagement, personal insult and slander, and personal discrimination and defamation*** . . . are not among the methods of a clean and honest science."[625]

"***Factual counter-arguments are basically welcome***. I count such objections as 'constructive criticism': both sides benefit from conversations that are carried out with mutual respect by the serious intention and the honest effort to find the truth."[626]

Joshua: Some simply ignore intelligent design theorists.

Lönnig: Such a method of ignoring the scientific opponent cannot serve scientific progress.[627]

Smith: "Richard Dawkins, the world's leading public spokesman for Darwinian evolution and an advocate of the 'new atheism,' has refused to debate Dr. Stephen C. Meyer."[628]

G. Kemper, H. Kemper, & Luskin: "When the facts are not on your side, it can be tempting to resort to **fallacies of reason**."[629]

Lönnig: "Vicious *ad hominem* attacks are the rule, not only by 'amateurs with little or no training in the field, who promote themselves as authorities' but also often by specialists who really should know better – proclaiming the conclusive/final/ultimate truth of their misunderstandings of evolutionary questions, prohibiting any rational discussion and trying to muzzle critical authors and to get them fired from their scientific institutions. In my case they failed."[630]

G. Kemper, H. Kemper, & Luskin: "People who are confident that the evidence is on their side don't usually struggle so hard to muzzle opposing views."[631]

Wells: "Personal attacks on me . . . merely expose the scientific and moral bankruptcy of Darwinism."[632]

Lönnig: "Those who are involved in such means, show that the that they (a) either ***do not have real***

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[624] Thomas Woodward, *Darwin Strikes Back: Defending the Science of Intelligent Design* (Grand Rapids, MI: Baker Books, 2006), 176.
[625] Wolf-Ekkehard Lönnig, *Reply to My Critics*, https://www.weloennig.de/Antwort_an_Kritiker.html : accessed 15 November 2025. Quoted passage translated from German.
[626] Wolf-Ekkehard Lönnig, *Reply to My Critics*, https://www.weloennig.de/Antwort_an_Kritiker.html : accessed 15 November 2025. Quoted passage translated from German.
[627] Wolf-Ekkehard Lönnig, correspondence to Prof. C. (pseudonym) and Prof. D. (pseudonym), 23 August 1994, published in "8) Was beweisen die Fakten zur Entstehung des Lebens?" in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/Entstehung.html : accessed 4 November 2025. Quoted passage translated from German.
[628] Anika Smith, "Leading Darwinist Richard Dawkins Dodges Debates, Refuses to Defend Evolution as *The Greatest Show on Earth*," *Science and Culture Today*, October 6, 2009, https://scienceandculture.com/2009/10/leading_darwinist_richard_dawk/ : accesses 18 November 2025.
[629] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 214.
[630] Wolf-Ekkehard Lönnig, *Are Birds Living Dinosaurs? A Review of Alan Feduccia's Most Recent Book (2020): Romancing the Birds and Dinosaurs* (self-published, 11 and 15/16 February 2021), 6; digital file, https://www.weloennig.de/Feduccia2020.pdf : accessed 13 November 2025.
[631] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 217.
[632] Jonathan Wells, "Critics Rave Over *Icons of Evolution*: A Response to Published Reviews," *Discovery Institute*, 12 June 2002, https://www.discovery.org/a/1180/ : accessed 29 October 2025.

factual arguments, or (b) that they are ***deeply unsure*** of their own position. . . . A certain uncertainty due to incomplete knowledge of the scientific and biological questions at issue can also play a role."[633]

Hunter: "The issues are so heartfelt and the atmosphere so charged that partisans often pigeon-hole those who do not agree with them into untenable straw man positions. These contrived positions make for easy targets and convenient justification to quickly dismiss entire viewpoints."[634]

Lönnig: "Inclusion of fundamental questions and problems that affect our overall understanding of the world and our identification in it is – for both parties – sometimes much more painful than the discussion *within* a view, such as the question of the HOW of the assumed self-organization in evolution."[635]

Bechly: "Behavior . . . by anti-ID activists — engaging in the misrepresentation of arguments (strawman fallacy), *ad hominem* attacks, and distorting facts — was one of the things that initially made me look deeper into intelligent design. As a scientist, I had become suspicious of why the Darwinists commonly used such dodgy debate tactics if they really have the better arguments on their side. Whenever one side feels so insecure that they have to resort to such appalling behavior, you can be pretty sure that something is wrong with their position."[636]

16.2.6 The Scientific Parity of Intelligent Design and Darwinian Theory

Meyer: "The claim 'The appearance of design in biology does not result from actual design' and the claim 'The appearance of design in biology does result from actual design' are not two different kinds of propositions; they are two different answers to the same question, a question that has long been part of evolutionary biology and historical science. If one of these propositions is scientific, then it would seem that the other is scientific as well."[637]

DeWolf, West, & Luskin: "The advocates of ID postulate the scientific possibility that Dawkins and others are wrong about the ability of non-intelligent processes to produce the appearance of design. Thus, unless the actions of an intelligent agent are excluded *a priori* from the definition of science, ID must be recognized as the scientific rival to theories like neo-Darwinism."[638]

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[633] Wolf-Ekkehard Lönnig, *Reply to My Critics*, https://www.weloennig.de/Antwort_an_Kritiker.html : accessed 15 November 2025. Quoted passage translated from German.
[634] Cornelius Hunter, "Science's Blind Spot Is Still There," *Science and Culture Today*, June 30, 2008, https://scienceandculture.com/2008/06/sciences_blind_spot_is_still_t/ : accessed October 29, 2025.
[635] Wolf-Ekkehard Lönnig, correspondence to Prof. U (pseudonym), 27 December 2001, published in *Ein paar offene Fragen der Evolutionstheorie sowie theologische Einwände von Evolutionstheoretikern zum Thema Intelligent Design*, https://www.weloennig.de/OffeneFragenEvol.html : accessed 17 November 2025. Quoted passage translated from German.
[636] Günter Bechly, "Examining 'Professor Dave's' Absurd Attack on Casey Luskin," *Science and Culture Today*, May 31, 2022, https://scienceandculture.com/2022/05/examining-professor-daves-absurd-attack-on-casey-luskin/ : accessed October 29, 2025.
[637] Stephen C. Meyer, "Sauce for the Goose: Intelligent Design, Scientific Methodology, and the Demarcation Problem," 15 February 2011, https://stephencmeyer.org/2011/02/15/sauce-for-the-goose/ : 12 November 2025.
[638] David K. DeWolf, John G. West, and Casey Luskin, *Intelligent Design Will Survive Kitzmiller v. Dover*, *Montana Law Review* 68, no. 1 (2007), 44n204 [PDF p. 38]; digital file, https://www.discovery.org/m/securepdfs/2021/03/Intelligent-Design-Will-Survive-Kitzmillerv.Dover-DeWolf-West-Luskin.pdf : accessed 12 November 2025.

Meyer: "The inference to intelligent design is based upon the same method of historical scientific reasoning and the same uniformitarian principles that Charles Darwin used in *On the Origin of Species*. The similarity in logical structure runs quite deep. Both the argument for intelligent design and the Darwinian argument for descent with modification were formulated as abductive inferences to the best explanation. Both theories address characteristically historical questions; both employ typically historical forms of explanation and testing; and both have metaphysical implications. Insofar as we regard Darwin's theory as a scientific theory, it seems appropriate to designate the theory of intelligent design as a scientific theory as well."[639]

DeWolf, West, & Luskin: "ID . . . uses principles of uniformitarianism to study present-day causes and then applies them to the historical record in order to *infer* the best explanation for the origin of the natural phenomena being studied."[640]

[639] Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (New York: HarperOne, 2013), 391–392.

[640] David K. DeWolf, John G. West, and Casey Luskin, *Intelligent Design Will Survive Kitzmiller v. Dover*, *Montana Law Review* 68, no. 1 (2007), 30 [PDF p.24]; digital file, https://www.discovery.org/m/securepdfs/2021/03/Intelligent-Design-Will-Survive-Kitzmillerv.Dover-DeWolf-West-Luskin.pdf : accessed 12 November 2025.

Section 17

17.1 Dialogue in *Reason in the Balance*:

> **Stephen:** That . . . sounds like a scientific prejudice to me [Winnie]. They're showing that evolutionary theory can't explain certain things and that the best explanation is an intelligent designer. Why isn't that science? Isn't that what scientists do—show problems with theories and offer better explanations?
>
> **Winnie:** Yes and no. For example, some scientists disagree with the idea that evolution happens in a fairly uniform manner. They believe that evolution goes forward in fits and starts because the fossil record seems to reveal periods of relative species stability and then periods of dramatic increase and change in species. But none of these scientists doubts the basic causal processes of natural selection. Rather, they're trying to come up with a similar, physical, Darwinian account of these periods of relatively great change. That's quite different from saying that Darwin's theory can't explain something at this point in time, so we must abandon the search for physical causes and go with divine intervention.[641]

17.2 Extended Dialogue

17.2.1 Avoiding Extreme Positions in Science

Johnson: "Theists do not throw up their hands and refer everything to God's great plan, but they do recognize that attempts to explain all of reality in totally naturalistic terms may leave out something of importance."[642]

"Science likes to assume that the cosmos is rationally understandable and not arbitrary, but how better to guarantee a rational cosmos than to recognize that it was created by a rational mind? If such a Creator really does exist, then science itself is ignoring the most important aspect of reality.[643]

Luskin: "There are two potential extreme positions in this debate: (A) Everything is designed and we should never invoke material causes, or (B) Nothing is designed and we must always invoke material causes.

"Materialists accuse ID proponents of adopting position (A), but they are wrong. ID adopts neither extreme position. ID proponents fully acknowledge that material causes often are the best explanation of things we find in the world, but we say that science should investigate every phenomenon without prejudging the correct explanation. ID actually leads to a science without a priori restrictions or assumptions about what we must discover using the scientific method.

"In contrast, materialists really do adopt extreme position (B). This makes for bad science because it

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[641] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 314–315.
[642] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 210.
[643] Phillip E. Johnson, *Reason in the Balance: The Case Against Naturalism in Science, Law & Education* (Downers Grove, IL: InterVarsity Press, 1995), 48–49.

presupposes the answers to scientific questions before a proper investigation is even complete."[644]

17.2.2 Punctuated Equilibrium, Abrupt Appearance, and the Fossil Record

Joshua: Winnie, you are referring to punctuated equilibrium developed by Gould and Eldredge.

Remine: "Some scientists think punctuated equilibria and neo-Darwinism are nearly the same. That view is mistaken. The two theories are substantially different, sharing only their commitment to common descent."[645]

Dembski & Wells: "Without an empirically confirmed material mechanism capable of accounting for these bursts in evolutionary activity, the theory of punctuated equilibrium finds its support not in any positive evidence but simply in the silence of the fossil record. Indeed, there is a deep irony that punctuated equilibrium finds its main evidential support in predicting the absence of transitional fossil forms."[646]

Lönnig: "The theory of punctuated equilibrium . . . was developed to come to grips with the general phenomenon of abrupt appearance and stasis (constancy of the *gestalt* of organisms usually documented for millions of years) in the fossil record."[647]

Davis & Kenyon: "Although ingenious, punctuated equilibrium advances an explanation for macroevolution's lack of evidence."[648]

Luskin: "Eldredge and Gould tried to justify why paleontologists should not expect to find series of transitional forms, and should instead expect 'breaks' in the fossil record where new species arise without leaving fossils of transitional forms. . . .

". . . They knew the data showed that potential transitional fossils are an extreme rarity. . . .

"Gould and Eldredge readily admitted the commonality of abrupt appearances of new species and the lack of transitional forms in the fossil record. And they admitted this pattern with respect to the fossil record as a whole — not simply when discussing 'preservational bias' for or against certain groups or something like that. They recognized the problem for gradualistic accounts of evolution *across the board*. Their model therefore sought to explain why abrupt change was the dominant pattern in the fossil record. The logic goes like this: We have a problem (abrupt appearance and stasis), and punc eq, in their telling, provides a solution. This alone tells us a major reason they proposed their theory was to explain the lack of transitional forms. . . .

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[644] Casey Luskin, "Intelligent Design Is a Historical Science, Just Like Darwinian Evolution," *Science and Culture Today*, October 31, 2012, https://scienceandculture.com/2012/10/intelligent_des_4/ : accessed October 29, 2025.
[645] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 335.
[646] William A. Dembski and Jonathan Wells, *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), 75.
[647] Wolf-Ekkehard Lönnig, "Dynamic Genomes, Morphological Stasis, and the Origin of Irreducible Complexity" (self-published, 3 August 2005; originally published in *Dynamical Genetics*, eds. Valerio Parisi, Valeria De Fonzo, and Filippo Aluffi-Pentini [Kerala, India: Research Signpost, 2004]), 109 [PDF p. 9]; digital file, https://www.weloennig.de/DynamicGenomes.pdf : accessed 13 November 2025.
[648] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 25.

"There are many scientific problems with punctuated equilibrium. The biggest is that it requires too much evolutionary change too quickly. . . .

"Sometimes, Darwin defenders will answer that Gould was merely concerned with understanding 'rates' of evolution. By reframing the debate that way, they attempt to argue (my paraphrase), 'Whether evolution took place at a gradual rate or a rapid one, either way evolution still took place!'

"Well, it's true that Gould was very concerned about rates of evolution — *in fact that's the point*: Abrupt appearance reflects a *very rapid rate of evolutionary change*. So, when someone claims that Gould sought to understand 'rates' of evolution, that's exactly right. And the rates of evolution that left him (in his words) most 'deeply troubled' were the rapid rates of evolution: evolution that occurred (apparently) at such a rapid rate that it left no evidence of transitions.

"Given that lack of direct fossil evidence, I would add that we are justified, it would seem, in wondering if evolution really occurred at all."[649]

Johnson: "An explanation of the punctuated equilibrium controversy . . . is bound to give skeptics the impression that Darwinists are making lame excuses for their inability to find supporting fossil evidence for their claims about macroevolution. No matter how earnestly the experts insist that they are only arguing about the *tempo* of gradualist evolution, and not about whether it ever happened, a few bright teenagers are likely to think that perhaps the evidence is missing because the step-by-step transitions never occurred."[650]

Bohlin: "Punk Eek was dead over twenty years ago but persisted on the coattails of Stephen Gould's considerable and deserved celebrity. But with him gone, his and Elderdege's unique contribution to evolutionary theory is finally passing quietly away."[651]

Meyer: "Few if any evolutionary biologists now regard punctuated equilibrium as a solution to the problem of the origin of biological form and novelty."[652]

Johnson: "That the effect of natural selection may be to keep a species from changing is not merely a theoretical possibility. . . . The prevailing characteristic of fossil species is *stasis*—the absence of change."[653]

"Sudden appearance and stasis of species in the fossil record is the opposite of what Darwinian theory would predict."[654]

Budziszewski: "One reason for the patterns evident in the fossil record is that the overwhelming majority of mutations are harmful rather than beneficial. Natural selection–the weeding out of

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[649] Casey Luskin, "Yes, the Punctuated Equilibrium Model Was Developed to Explain the Lack of Transitional Fossils," *Science and Culture Today*, January 5, 2022, https://scienceandculture.com/2022/01/yes-the-punctuated-equilibrium-model-was-developed-to-explain-the-lack-of-transitional-fossils/ : accessed October 29, 2025.
[650] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 141–142.
[651] Raymond Bohlin, "The Quiet Passing of Punctuated Equilibrium, Finally!" *Science and Culture Today*, July 22, 2013, https://scienceandculture.com/2013/07/the_quiet_passi/ : accessed October 29, 2025.
[652] Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (New York: HarperOne, 2013), 149.
[653] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 23–24.
[654] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 56.

imperfectly adapted organisms–turns out to work against radical change, not for it."[655]

Johnson: "[Creative natural selection] is disconfirmed by the fossil record."[656]

"When disconfirming evidence cannot be ignored altogether, it is countered with ad hoc hypotheses. . . . Paleontologists overlooked the prevalence in the fossil record of stasis. Stasis could not come to public notice until it was dressed up as evidence for 'punctuated equilibrium.'"[657]

Meyer, Nelson, Moneymaker, Minnich, & Seelke: "Neo-Darwinists have critiqued punctuated equilibrium because they say it lacks a mechanism that can produce biological change as fast as the fossil record requires. On the other hand, advocates of punctuated equilibrium have critiqued neo-Darwinism because the fossil record contradicts the neo-Darwinian picture of the history of life. Critics of both argue that there are far fewer transitional forms in the fossil record than we would expect even if new forms of life arose quickly."[658]

G. Kemper, H. Kemper, & Luskin: "The fossil record does not bear out the predictions and expectations of neo-Darwinian evolution. . . .

". . . The history of life shows a pattern of explosions where new fossil forms come into existence without clear evolutionary precursors. The fossil record supports ID's prediction that species might appear abruptly, indicating the rapid infusion of new information into the natural world.

"Design theorists have observed that intelligent agents are capable of doing just that."[659]

Wells: "The major phylum-level differences that Darwin predicted would appear last in the fossil record actually appear first."[660]

"Darwinian evolution is 'bottom-up,' referring to its prediction that lower levels in the biological hierarchy should emerge before higher ones. But the Cambrian explosion shows the opposite. . . .

"Clearly, the Cambrian fossil record explosion is *not* what one would expect from Darwin's theory. . . . Since higher levels of the biological hierarchy appear first, one could even say that the Cambrian explosion stands Darwin's tree of life on its head."[661]

Meyer: "When we encounter objects that manifest any of the key features present in the Cambrian animals, or events that exhibit the patterns present in the Cambrian fossil record, and we know how these features and patterns arose, invariably we find that intelligent design played a causal role in their origin. Thus, when we encounter these same features in the Cambrian event, we may infer—based upon established cause-and-effect relationships and uniformitarian principles—that the same kind of cause operated in the history of life. In other words, intelligent design constitutes the best,

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[655] J. Budziszewski, "Just the Facts, Please," *Discovery Institute*, 1 October 1994, https://www.discovery.org/a/149/ : accessed 29 October 2025.
[656] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 95.
[657] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 154.
[658] Stephen C. Meyer, Paul A. Nelson, Jonathan Moneymaker, Scott Minnich, and Ralph Seelke, *Explore Evolution: The Arguments for and Against Neo-Darwinism*, 1st UK ed. (Melbourne and London: Hill House Publishers, 2009), 34.
[659] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 170.
[660] Jonathan Wells, *The Politically Incorrect Guide to Darwinism and Intelligent Design* (Washington, DC: Regnery Publishing, 2006), 17.
[661] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 41–42.

most causally adequate explanation for the origin of information and circuitry necessary to build the Cambrian animals. It also provides the best explanation for the top-down, explosive, and discontinuous pattern of appearance of the Cambrian animals in the fossil record."[662]

Luskin: "This pattern of explosions shows that fully functional blueprints are developed before the design is implemented. This is consistent with how humans design technology. A car company, for example, will only introduce a car into the market after it has been designed, built, and is ready to function for the consumer. Or a software designer will not release a program for use until it compiles and performs its intended function. In the same way, the explosions in the history of life show that organisms are introduced into the biosphere fully functional and 'fully formed'—indicating that a mature blueprint has already been developed and implemented prior to the origin of the organism."[663]

Sternberg: "When these forms appeared, it wasn't just one or two rickety, hanging-on-the-edge forms. It was a panoply, a manifold of different body types. It does have an explanation if you regard, in addition to matter and energy in the universe, information as being just as important, if not more important. And that is where I think intelligent design theory comes into play."[664]

Davis & Kenyon: "As fossil finds grew, it became apparent that the fossils were falling into a definite pattern. Instead of forming a graded series, as Darwin had expected, the fossils filled existing taxa, leaving the gaps between them conspicuously empty. The pattern in the fossils is not a continuous chain but clusters separated by gaps. Perhaps that should not be surprising—it is, after all, the same pattern we see among living organisms today. There are many breeds of horses, but they are clearly separated from cattle."[665]

Dembski & Wells: "To explain the gaps in the fossil record by means of abrupt emergence is to say that the gaps are real—that the discontinuities in the fossil record represent discontinuities in the history of life. Abrupt emergence isn't just saying that transitional links connecting major groups of organisms are absent from the fossil record. It's saying that transitional links never existed.

"Abrupt emergence is the face-value interpretation of the fossil record. It provides a straightforward and parsimonious explanation for the absence of fossil transitional forms."[666]

17.2.3 Fossil Sampling and the Reliability of the Fossil Record

Joshua: Even though fossil finds have grown considerably since Darwin's time, how can we be sure that the pattern we see in the fossil record is real?

Nelson: "Imagine you go beachcombing. You live near the ocean, and year in year out, you're out there on the beach picking up what the waves wash in. And the first couple of years, you find a lot of

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[662] Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (New York: HarperOne, 2013), 381.
[663] Casey Luskin, *The Top Five Scientific Evidences for Intelligent Design*, ReThink Series (Seattle: Discovery Institute, 2023), 73, https://www.discovery.org/f/100189/ : accessed 29 October 2025.
[664] Richard Sternberg, scene "Biological Information," in *Darwin's Dilemma: The Mystery of the Cambrian Fossil Record*, directed by Lad Allen (La Mirada, California: Illustra Media, 2009), DVD, timestamp 1:09:53–1:10:25.
[665] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 24.
[666] William A. Dembski and Jonathan Wells, *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), 77.

things that surprise you, you know, some funny bit of this or that. But as the years go by and you're beachcombing in a regular way, collecting what's there, what you find falls into categories that you've already established. It's driftwood. It's a piece of kelp. It's a piece of garbage. And, in fact, when you go out beachcombing, you just find the same thing over and over because you've sampled and sampled and sampled, and what the ocean is bringing in represents what the ocean already brought in. So you, as a beachcomber, walk along and you see wood, kelp, garbage, whatever, it's already there in sort of the collection that you've established. I think the same thing applies to the history of life on earth, sampling the fossil record."[667]

Bechly: "It is called the collector curve . . . , which plots the discovery of new fossil taxa in a diagram with say the number of newly discovered species in the y-axis and the invested effort (in man-hours or grant money) over time on the x-axis. In the beginning the plotted sigmoidal curve is steep, which means you don't have to invest a lot of time and money to find something new, but with progressing research the curve flattens and ultimately it reaches a point of saturation, where we know that we have a pretty good estimate of what existed."[668]

Bethell: "Scientists use them to measure the extent of many different types of collections.

"When we start collecting anything, each new item or specimen is one we have not seen before. Then, as we keep finding more, we are likely to find that most are already familiar to us. At that point our collector's curve begins to 'level off.' Increasingly, our response is likely to be: 'We've already seen one of those.'"[669]

Bechly: "On the lowest level of species diversity the fossil record will always remain highly incomplete, since less than 1% of all species that ever existed have become fossilized according to most estimates. . . . On the higher taxonomic levels, which are relevant for macroevolution, the fossil record is very complete."[670]

Lönnig: "The rule . . . is that the newly discovered forms may be placed in long-known genera, families, orders, and classes."[671]

"Even if the fossil record is incomplete – we cannot assume finds that we do not yet have (or perhaps

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[667] Paul Nelson, response to the question "How complete is the Cambrian fossil record?," bonus feature "Questions & Answers," in *Darwin's Dilemma: The Mystery of the Cambrian Fossil Record*, directed by Lad Allen (La Mirada, California: Illustra Media, 2009), DVD.

[668] Günter Bechly, "Fossil Friday: Discontinuities in the Fossil Record — A Problem for Neo-Darwinism," *Science and Culture Today*, 10 May 2024, https://scienceandculture.com/2024/05/fossil-friday-discontinuities-in-the-fossil-record-a-problem-for-neo-darwinism/ : accessed 29 October 2025.

[669] Tom Bethell, *Darwin's House of Cards: A Journalist's Odyssey Through the Darwin Debates*, Kindle edition (Seattle: Discovery Institute Press, 2017), 129. Page number reflects the Kindle edition mapped to ISBN 1936599414 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for "Scientists use"; for print readers, the page number provides approximate placement.

[670] Günter Bechly, "Fossil Friday: Discontinuities in the Fossil Record — A Problem for Neo-Darwinism," *Science and Culture Today*, 10 May 2024, https://scienceandculture.com/2024/05/fossil-friday-discontinuities-in-the-fossil-record-a-problem-for-neo-darwinism/ : accessed 29 October 2025.

[671] Wolf-Ekkehard Lönnig, "Systematische Diskontinuität bei der Entstehung Höherer Taxonomischer Kategorien," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesIV5.SysDis.html : accessed 2 November 2025. Quoted passage translated from German.

never have), but rather from the Facts as far as we know them so far."[672]

[672] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 282; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German. In the original context, Lönnig is not discussing the fossil record in general.

Section 18

18.1 Dialogue in *Reason in the Balance*:

> **Stephen:** But what's wrong with [saying that Darwin's theory can't explain something at this point in time, so we must abandon the search for physical causes and go with divine intervention]? If we couldn't explain the development of the eye without a designer, then it would just be good science to accept the designer explanation.
>
> **Winnie:** Nice try, but notice that the designer theory isn't really an explanation. It doesn't tell us how the eye was made—just poof, the eye. It doesn't explain the variations among light-sensing creatures. It doesn't tell us why the eagle sees better than we do. It's the opposite of a fruitful theory. It's just this: "God did it. Now stop asking questions."[673]

18.2 Extended Dialogue

18.2.1 Tentativeness and Evaluating Explanations Based on Present Evidence

Johnson: "I don't urge scientists to give up on any theory or research agenda until they themselves are convinced that further efforts would be fruitless."[674]

"The only way to find out what the limits of naturalistic science may be is for some persons to act as if there were no limits and see how far they can go—and then for other persons who are free of naturalistic preconceptions to evaluate their results and consider whether limits have been revealed."[675]

Wells: "Whenever people persist in defending a materialistic explanation after it has been shown to be inconsistent with the evidence, and is thus empirically dead, they are practicing zombie science."[676]

Lönnig: "*I notice a lot of faith and hope among evolutionary theorists* (what theory cannot explain today, will certainly be able to explain it tomorrow)."[677]

Johnson: "When I debate Darwinists, . . . they shift the burden of proof to the skeptics, arguing that the mere fact we don't have a satisfactory mechanism for now doesn't necessarily mean that one will

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[673] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 315.
[674] Phillip E. Johnson, *Reason in the Balance: The Case Against Naturalism in Science, Law & Education* (Downers Grove, IL: InterVarsity Press, 1995), 95.
[675] Phillip E. Johnson, *Reason in the Balance: The Case Against Naturalism in Science, Law & Education* (Downers Grove, IL: InterVarsity Press, 1995), 97.
[676] Jonathan Wells, *Zombie Science: More Icons of Evolution*, Kindle edition (Seattle: Discovery Institute Press, 2017), 18. Page number reflects the Kindle edition mapped to ISBN 1936599449 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "people persist"; for print readers, the page provides approximate placement.
[677] Wolf-Ekkehard Lönnig, *Der Schlammspringer (Periophtalmus) – ein Beweis für "Macroevolution in Progress"?*, (self-published, 2006), 4–5; digital file, https://www.weloennig.de/Schlammspringer.pdf : accessed 13 November 2025. Quoted passage translated from German.

not be discovered at some time in the future. (. . . Scientific materialists consider the promise of a materialist mechanism in the future to be equivalent to the demonstration of a mechanism in the present. If the whole system is as true as arithmetic, the missing mechanism will inevitably be discovered.) When they are on the defensive, Darwinists frequently dismiss the mechanism as a mere detail, insisting that all scientists are agreed that 'evolution is a fact,' even though they may disagree about exactly how it occurred."[678]

Scherer: "As a natural scientist, one must—until proof of the contrary—be prepared for the possibility that there could be questions which are not solvable by evolutionary biology."[679]

Behe: "Might there be an as-yet-undiscovered natural process that would explain biochemical complexity? No one would be foolish enough to categorically deny the possibility. Nonetheless, we can say that if there is such a process, no one has a clue how it would work. Further, it would go against all human experience, like postulating that a natural process might explain computers."[680]

G. Kemper, H. Kemper, & Luskin: "There are few, if any, things we can know with complete certainty. In fact, science never claims to provide absolute proof. Most scientific questions require a choice between competing possible answers. In those situations, one should choose the explanation that best fits the evidence."[681]

Meyer: "[My argument for intelligent design] claims only that intelligent design provides the best explanation based upon what we know now."[682]

Cassell: "While there is a place for doggedness, science is ultimately about following the evidence, and the historical sciences, including origins science, is about seeking out the best explanation given the available evidence."[683]

Meyer: "To determine the best explanation, scientists do not need to say 'never' with absolute certainty. They need only say that a postulated cause is best, given what we know at present about the demonstrated causal powers of competing entities or agencies. That cause C can produce effect E makes it a better explanation of E than some cause D that has never produced E (especially if D seems incapable of doing so on theoretical grounds), even if D might later demonstrate causal powers of which we are presently ignorant.

"Thus, the objection that the design inference constitutes an argument from ignorance reduces in essence to a restatement of the problem of induction. Yet one could make the same objection against any scientific law or explanation or against any historical inference that takes present, but not future, knowledge of natural laws and causal powers into account. Our knowledge of what can and cannot

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[678] Phillip E. Johnson, "The Wedge: Breaking the Modernist Monopoly on Science," *Access Research Network*, 1999, https://arn.org/docs/johnson/le_wedge.htm : accessed 26 December 2025.
[679] Siegfried Scherer, "Molekulare Evolutionsmechanismen," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 175, boxed section. Quoted passage translated from German.
[680] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 203–204.
[681] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 32.
[682] Stephen C. Meyer, "Denying the Signature: A Response to Bishop and O'Connor," in David Klinghoffer, ed., *Debating Darwin's Doubt: A Scientific Controversy that Can No Longer Be Denied* (Seattle: Discovery Institute Press, 2015), 338.
[683] Eric Cassell, *Animal Algorithms: Evolution and the Mysterious Origin of Ingenious Instincts* (Seattle: Discovery Institute Press, 2021), 67.

produce large amounts of specified information may later have to be revised, but so might the laws of thermodynamics. Inferences to design may later prove incorrect, as may other inferences implicating various natural causes. Such possibilities do not stop scientists from making generalizations about the causal powers of various entities or from using those generalizations to identify probable or most plausible causes in particular cases."[684]

Lönnig: "We always want to be ready to make corrections on the basis of new facts and discoveries, because this is a maxim of all scientific research."[685]

Swift: "Perhaps tomorrow someone will come up with a viable naturalistic account for the complexity and evident design of molecular biology. But, equally, it is nothing but blinkered naturalism to insist that one day we will find such an explanation. And, at present, the evidence is against it – the more we know of biology, the more formidable the gaps appear.

"I am certainly not suggesting scientific research cease in a particular area in favour of a supernatural or teleological explanation. All I am challenging is the presumption that there *must* be a natural explanation. And, if persistent searching fails to come up with a natural explanation, it is entirely reasonable – and consistent with science – to leave open the possibility of a supernatural one."[686]

Dembski: "Efforts to overturn the various criteria for detecting design are welcome within the intelligent design research program. (That's part of keeping the program honest.)"[687]

Meis: "It would be sufficient if one could prove that meaningful information could be created in even one case without the use of intelligence and the intelligent design theory would have failed."[688]

Thaxton: "There is no ground to expect the DNA design inference to be overturned by some new scientific discovery of a natural cause for the informational sequences in DNA. If such a discovery of natural causes producing specified complexity is made, then much more than 'one more disappointment' will be involved. The whole presumed knowledge of the past can be doubted. Our knowledge of antiquity, for example, based on the supposed decipherment of ancient languages, will be in jeopardy. For we only 'know' about antiquity based on the soundness of the method of causal inference from experience to show us that an intelligent cause most probably produced the artifacts and strange writings found in those long ago places. Even that birth certificate in the attic that 'identifies' you as the legitimate family heir may not be trusted."[689]

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[684] Stephen C. Meyer, "Evidence of Intelligent Design in the Origin of Life," in Charles B. Thaxton, Walter L. Bradley, Roger L. Olsen, James Tour, Stephen Meyer, Jonathan Wells, Guillermo Gonzalez, Brian Miller, and David Klinghoffer, *The Mystery of Life's Origin: The Continuing Controversy* (Seattle: Discovery Institute Press, 2020), 459.

[685] Wolf-Ekkehard Lönnig, "Neuere evolutionistische Abhandlungen – L. v. Salvini-Plawen und Ernst Mayr: On the Evolution of Photoreceptors and Eyes (1977)," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIINeAb.html : accessed 3 November 2025. Quoted passage translated from German.

[686] David W. Swift, *Evolution Under the Microscope: A Scientific Critique of the Theory of Evolution* (Leighton, UK: Leighton Academic Press, 2002), 408.

[687] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 272.

[688] Karl Friederich Meis, "Kritikpunkt 12," *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, last updated 19 July 2025, https://www.intelligentdesigner.de/kritikpunkt-12/ : accessed 29 August 2025. Quoted passage translated from German.

[689] Charles Thaxton, "A New Design Argument," *Discovery Institute*, 1 September 1994, https://www.discovery.org/a/137/ : accessed 29 October 2025.

Wells and Dembski: "How can we see that specified complexity is a reliable criterion for detecting design? Alternatively, how can we see that this criterion successfully avoids false positives—that whenever it attributes design, it does so correctly? The justification for this claim is a straightforward inductive generalization: In every instance where specified complexity is exhibited and where the underlying causal story is known (i.e., where we are not just dealing with circumstantial evidence, but where, as it were, the video camera is running and any alleged designer would be caught red-handed), it turns out design actually is present. Therefore, design actually is present whenever the specified-complexity is exhibited. Indeed, concerted efforts by the scientific community to show that this criterion can mistakenly identify design have failed. In particular, none of the proposed counterexamples attempting to show that this criterion commits false positives has held up. That is to say, there is no known instance of something that is both complex (i.e., highly improbable) and specified (i.e., low descriptive complexity) but not also designed."[690]

18.2.2 Eye Design, Convergence, and the Case for Common Design

Joshua: How would an intelligent design theorist explain why a bird of prey, like an eagle or falcon, sees better than we do?

Myers III*:* "What is important is not just the particular parts [of the refractive cornea eye], but *structurally* how these parts are uniquely instantiated in animal species with refinements based on the requirements specific to the habitat in which they live. For example, even though humans and falcons have the same basic components of the refractive cornea eye type, structurally they are quite different. . . .

"The requirements of a falcon's refractive cornea eye type include that it be able to find its prey over great distances. This means that, as compared to humans, it needs a larger lens, more aqueous humor to nourish the cornea, a more convex retina, and a higher concentration of light-gathering cones. To aid high speed hunting dives, which can surpass 200 miles per hour, the falcon eye also sports a translucent nictitating membrane (third eyelid) to clear any debris on dives and also keep the eye moist. . . .

". . . Evolutionary biologists believe the eye, which they admit is precisely engineered, has evolved independently more than fifty times.

". . . To say that evolution, which is blind, undirected, and counts fully on fortuitous random mutations, will solve the same engineering problem multiple times through what is essentially mutational luck is unrealistic given statistically vanishing probabilities over the short timelines of even hundreds of millions of years. However, when we look at the various eye designs . . . , it is clear they each meet a set of specific requirements, following principles of object-oriented design we would expect from a master programmer."[691]

Lönnig: "From a scientific point of view . . . the situation is as follows: About the probability structure of the emergence of photoreceptors from undifferentiated precursors by mutation, recombination

[690] Jonathan Wells and William A. Dembski, "General Notes," in *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), CD-ROM, 50.
[691] Walter Myers III, "Modern Software and Biological Organisms: Object-Oriented Design," *Science and Culture Today*, August 10, 2018, https://scienceandculture.com/2018/08/modern-software-and-biological-organisms-object-oriented-design/ : accessed October 29, 2025.

and selection, we only know so far that the postulated development is not reproducible. The deeper we penetrate into matter, the more complex the structures and processes become, i.e. the less likely becomes the postulate that the emergence of such structures can only be achieved through directionless mutations and selection. If such receptors have now arisen 60 times or more independently of each other, then the improbabilities for random evolution add up immeasurably. Because: if the formation of new photoreceptors as a one-time process by the known evolutionary factors is already so highly unlikely that it cannot be reproduced, then one can confidently place a 60-fold independent random repetition in the realm of myths."[692]

Luskin: "Vertebrates, insects, and jellyfish use similar master control genes to control the development of their widely different eyes, but their alleged common ancestor is not thought to have had a common type of eye. In these cases, living animal groups would NOT be expected to have inherited their genetic 'tool kits' from a common ancestor because there is no reason to believe that the common ancestor was using that genetic toolkit for some common body part."[693]

Coppedge: "It makes sense that a designer would understand optics and electromagnetic waves. A mind can take parts and arrange them into corneas, lenses, and receptors appropriate for the needs and sizes of disparate organisms. Unguided selection cannot do that. The environment cannot do that. From our uniform experience, the only cause we know that can organize parts into a functioning whole is intelligence. This is positive evidence for design. The alternative theory could be dubbed, 'Convergence of the Gaps.'"[694]

Lönnig: "The claim for the evolutionary interpretation of similarity through convergence already presupposes the entire neo-Darwinian worldview as true."[695]

Sewell: "This phenomenon, known as 'convergence,' suggests common design rather than common descent: the probability of similar designs arising independently through random processes is very small, but a designer could, of course, take a good design and apply it several times in different places, to unrelated species. Convergence is a phenomenon often seen in the development of human technology, for example, Ford automobiles and Boeing jets may simultaneously evolve similar new GPS systems."[696]

Junker: "The occurrence of convergences is usually explained by the fact that evolution in such cases has been strongly channeled by similar selection pressures. Against this, however, two things can be objected: Firstly, in the case of major changes . . . , these are only conjectures that are hardly *empirically* testable. Convergences are only empirically verifiable in the microevolutionary realm:

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[692] Wolf-Ekkehard Lönnig, "Neuere evolutionistische Abhandlungen – L. v. Salvini-Plawen und Ernst Mayr: On the Evolution of Photoreceptors and Eyes (1977)," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIINeAb.html : accessed 3 November 2025. Quoted passage translated from German.

[693] Casey Luskin, "Evolving Views of Embryology," *Judging PBS*, https://judgingpbs.com/slide/dfp-slide7/ accessed 14 November 2025.

[694] David Coppedge, "Convergence? One-Celled Creature Has an Eye!" *Science and Culture Today*, March 9, 2023, https://scienceandculture.com/2023/03/convergence-one-celled-creature-has-an-eye/ : accessed October 29, 2025.

[695] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 218; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[696] Granville Sewell, "Two Reasons Darwinism Survives," *Science and Culture Today*, February 2, 2014, https://scienceandculture.com/2014/02/two_reasons_dar/ : accessed October 29, 2025.

Identical selection pressures can lead *already functioning* structures of a *polyvalent* ancestral form to *similar specializations* . . . , but such processes do not cause the emergence of novel structural elements. Selection can only act when a (new) function already exists. Therefore, identical selection pressures cannot be claimed for convergent evolutionary *novelties*.

"Secondly, convergences occur in many cases in which no connection with similar selection effects or similar environmental conditions can be identified. . . . Developmental constraints also do not explain why *novelties* occur convergently, because no 'compulsion' to form novel structures with new functions follows from natural processes. *The frequent occurrence of convergences is not understood from an evolutionary-theoretical perspective*."[697]

Hunter: "Evolution is supposed to be a blind, unguided process that has no particular end in view. It is an open-loop process that meanders through an astronomical design space influenced only by the unguided events of the moment. Given the enormous size of that design space, it is unlikely that evolution would arrive at a similar design in independent lineages, in different environments and starting from different initial conditions. But in the origin of the human and squid eye, and myriad other examples in biology, this is precisely what we must believe occurred."[698]

Junker: "The phenomenon of convergence is not a marginal phenomenon that biologists only encounter in rare special cases; it is widespread, even in complex structures."[699]

Meyer, Nelson, Moneymaker, Minnich, & Seelke: "Convergence is a deeply intriguing mystery, given how complex some of the structures are. Some scientists are skeptical that an undirected process like natural selection and mutation would have stumbled upon the same complex structure many different times."[700]

Lönnig: "A more detailed biological and mathematical investigation of the improbabilities resulting from the convergence postulate could make a significant contribution to the demythologization of the theory of evolution."[701]

Shedinger: "More recently, paleontologist Simon Conway Morris has made convergent evolution the focus of his work. . . .

". . . According to Conway Morris, the best way to enrage an evolutionary biologist is to sidle up and suggest that evolution has a remarkable directionality. 'If you are lucky," he quips, 'all you'll need is a

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[697] Reinhard Junker, "Ähnlichkeiten," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 182–183. Quoted passage translated from German.

[698] Cornelius Hunter, "Science's Blind Spot Is Still There," *Science and Culture Today*, June 30, 2008, https://scienceandculture.com/2008/06/sciences_blind_spot_is_still_t/ : accessed October 29, 2025.

[699] Reinhard Junker, "Ähnlichkeiten," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 184. Quoted passage translated from German.

[700] Stephen C. Meyer, Paul A. Nelson, Jonathan Moneymaker, Scott Minnich, and Ralph Seelke, *Explore Evolution: The Arguments for and Against Neo-Darwinism*, 1st U.S. ed. (Melbourne and London: Hill House Publishers, 2007), 48.

[701] Wolf-Ekkehard Lönnig, correspondence to Prof. C. (pseudonym) and Prof. D. (pseudonym), 23 August 1994, published in "6) Beweisen die paläobotanische Befunde, dass der Species <u>keine</u> festen Grenzen gesteckt sind?" in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/feste_Grenzen.html : accessed 4 November 2025. Quoted passage translated from German.

clean handkerchief to dab the spots of spittle, but sometimes the response is closer to foaming.’”[702]

[702] Robert Shedinger, “Ignoring the Obvious: Convergent Evolution in *Strickberger’s Evolution*,” *Science and Culture Today*, 8 August 2020, https://scienceandculture.com/2020/08/ignoring-the-obvious-convergent-evolution-in-strickbergers-evolution/ : accessed 29 October 2025.

Section 19

19.1 Dialogue in *Reason in the Balance*:

Stephen: So [Winnie] when there are problems with a scientific theory, one which is well established anyway, we just dismiss the problem?

Winnie: I didn't say that. Problems are what make science interesting. Figuring out how to explain things we don't currently understand is the business of science. But moving to intelligent design is to abandon the project. Even the intelligent design people don't deny the fossil record or that many species exhibit descent with modification. They just pick on a few examples that may pose a challenge and say that Darwin's theory can't explain that, so there must be divine intervention.

Stephen: OK, so maybe intelligent design has some problems. But I still like the idea of a divine creator.[703]

19.2 Extended Dialogue

19.2.1 Mini-Solution Reasoning

Axe: "Instead of asking what *needs* to be explained naturalistically, you concentrate on what *can* be so explained. Specifically, you look for some small piece of the real problem for which you can propose even a sketchy naturalistic solution. Then, once you have this mini-solution, you present it as a small but significant step toward the ultimate goal of a full credible story.

"But the only way to tell whether small steps of this kind are taking us *toward* that ultimate goal or *away* from it is to examine them carefully in the context of the whole problem."[704]

G. Kemper, H. Kemper, & Luskin: "The tactic Axe describes can be seen in many mainstream media articles, which use modest evidence to promise that a full materialistic explanation is just around the corner."[705]

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[703] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 315.
[704] Douglas Axe, "The Science of Denial," *Science and Culture Today*, 7 October 2009, https://scienceandculture.com/2009/10/the_science_of_denial/ : accessed 29 October 2025.
[705] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 31.

19.2.2 Descent with Modification

Lönnig: "In contrast to creationism, the ID movement also includes descendant theorists."[706]

Bechly: "[For example], Michael Behe, Michael Denton, Richard Sternberg, and myself)."[707]

G. Kemper, H. Kemper, & Luskin: "ID does not . . . necessarily conflict with common descent . . .—so long as the mechanism of change is not considered wholly blind and unguided."[708]

"While the vast majority of materialists accept universal common ancestry, it should be noted that a growing minority is beginning to doubt that there is a single, grand 'tree of life'"[709]

Rammerstorfer: "Even if absolutely conclusive evidence were presented for common descent in the sense of development from common ancestors, this would not necessarily mean that a *mechanism* rather than a purposive entity caused this. . . .

". . . Intelligence can, as experience shows, be behind situations that look like 'Descent With Modification'"[710]

Wells: "At the level of kingdoms, phyla, and classes, descent with modification from common ancestors is obviously *not* an observed fact."[711]

"No one doubts that descent with modification occurs in the course of ordinary biological reproduction."[712]

Johnson: "It 'occurs' every time a baby is born."[713]

Wells: "Like change over time, descent with modification within a species is utterly uncontroversial. But Darwinian evolution claims much more. In particular, it claims that descent with modification explains the origin and diversification of *all* living things."[714]

"Nobody in biology doubts 'change in gene frequencies' or 'descent with modification' within existing

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[706] Wolf-Ekkehard Lönnig, *Synthetische Evolutionstheorie vs. Intelligent Design*, (2003), https://www.weloennig.de/KutscheraWiderlegung1.html : accessed 13 November 2025. Quoted passage translated from German.
[707] Günter Bechly, "Debunking 'Professor Dave's' Hit Piece Against Stephen Meyer," *Science and Culture Today*, November 28, 2022, https://scienceandculture.com/2022/11/debunking-professor-daves-hit-piece-against-stephen-meyer/ : accessed October 29, 2025.
[708] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 32.
[709] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 254n4.
[710] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 63–64. Quoted passage translated from German.
[711] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 57.
[712] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 5.
[713] Phillip E. Johnson, "The Wedge: Breaking the Modernist Monopoly on Science," *Access Research Network*, 1999, https://arn.org/docs/johnson/le_wedge.htm : accessed 26 December 2025.
[714] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 5.

species."[715]

19.2.3 Population Genetics

Lönnig: "People are currently quite happy to cite some mathematical approaches that are supposed to prove the theory of evolution."[716]

Wells: "In the early twentieth century, British geneticists J. B. S. Haldane and Ronald Fisher and American geneticist Sewall Wright pioneered methods for calculating the effects of natural selection, mutation, and other factors on the distribution of alleles in populations. As allele distributions changed, so did the 'gene pool' of the population. Changes in the gene pool were assumed to cause microevolution and, eventually, macroevolution.

"Many people concluded that evolution could be reduced to population genetics. One biology textbook went so far as to say that 'evolution can be precisely defined as any change in the frequency of alleles within a gene pool from one generation to the next.'"[717]

Lönnig: "In Darwin and elsewhere, the concept of evolution is not about the ***frequency of distribution of already existing*** factors, genes . . . , but about the formation of new genes, about the new differentiation of structures, the emergence of new organs and organ systems, about the origin of the synorganization at all levels. Of course, this whole area is not covered at all with gene frequency changes. If the topic of evolution was only about changes in gene frequency, I would also be a good evolutionist."[718]

19.2.4 Microevolution, Macroevolution, and the Problem of Extrapolation

Dembski & Wells: "The occurrence of microevolution is not a matter of debate between Darwinists and intelligent design proponents. Microevolution can be observed, and scientists acknowledge it. What is at issue is macroevolution."[719]

Woodward: "By the time I received my degree from Princeton, I was convinced that microevolution (survival of the fittest) is solidly factual, but macroevolution (arrival of the fittest) was far less

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[715] Jonathan Wells, *The Politically Incorrect Guide to Darwinism and Intelligent Design* (Washington, DC: Regnery Publishing, 2006), 2–3.

[716] Wolf-Ekkehard Lönnig, Appendix N–Z (descriptive title), in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIAbII.html : accessed 3 November 2025. Quoted passage translated from German.

[717] Jonathan Wells, *Zombie Science: More Icons of Evolution*, Kindle edition (Seattle: Discovery Institute Press, 2017), 86–87. Page number reflects the Kindle edition mapped to ISBN 1936599449 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "people persist"; for print readers, the page provides approximate placement.

[718] Wolf-Ekkehard Lönnig, Appendix N–Z (descriptive title), in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIAbII.html : accessed 3 November 2025. Quoted passage translated from German.

[719] William A. Dembski and Jonathan Wells, *The Design of Life: Discovering Signs of Intelligence in Biological Systems* (Dallas, TX: Foundation for Thought and Ethics, 2008), 33.

established on the foundation of fact."[720]

Meyer: "Over the past three decades, many evolutionary biologists have challenged a key tenet of the neo-Darwinian synthesis, namely, the idea that small-scale microevolutionary changes can be extrapolated to explain large-scale macroevolutionary innovations."[721]

"Many now repeat an old aphorism affirming that mutation and natural selection can account for 'the survival of the fittest, but not the arrival of the fittest.'"[722]

Bethell: "Although extrapolation can be a legitimate procedure in scientific analysis, it is always a risky one, and if done without due care can lead to erroneous conclusions."[723]

Luskin: "Not all extrapolations are warranted."[724]

Meyer, Nelson, Moneymaker, Minnich, & Seelke: "Whether you're talking about artificial selection or about microevolution that occurs naturally, changes in the sub-population take place as genetic information is lost to that population. Here's the rub: producing new organs or body plans requires new lines of genetic code—*more* information, not less. Not surprisingly, many scientists argue that small-scale microevolutionary change cannot be extrapolated to explain large-scale macroevolutionary innovation. Some would argue that it's illogical to claim that a process that loses information can explain the origin of a new type of animal—a process that needs an influx of new information.

"These critics would say that natural selection works well as an editor, but not an author. It has a demonstrated capacity to weed out the failures from among what already exists, but it has not been shown to generate new biological information or structures."[725]

Luskin: "Proponents of intelligent design would define 'new' genetic information as a new stretch of DNA which actually performs some different, useful, and new function. . . .

". . . Evolutionary explanations cannot simply rely upon duplication, for there must be duplication followed by recruitment to a new function. . . .

"Many scientific papers purporting to show the evolution of 'new genetic information' do little more than identify molecular similarities and differences between existing genes and then tell evolutionary just-so stories of duplication, rearrangement, and subsequent divergence based upon vague appeals

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[720] Thomas Woodward, *Darwin Strikes Back: Defending the Science of Intelligent Design* (Grand Rapids, MI: Baker Books, 2006), 15.

[721] Stephen C. Meyer, *Return of the God Hypothesis: Three Scientific Discoveries That Reveal the Mind Behind the Universe* (New York: HarperOne, 2021), 195.

[722] Stephen C. Meyer, *Return of the God Hypothesis: Three Scientific Discoveries That Reveal the Mind Behind the Universe* (New York: HarperOne, 2021), 196.

[723] Tom Bethell, *Darwin's House of Cards: A Journalist's Odyssey Through the Darwin Debates*, Kindle edition (Seattle: Discovery Institute Press, 2017), 25. Page number reflects the Kindle edition mapped to ISBN 1936599414 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for "although extrapolation"; for print readers, the page number provides approximate placement.

[724] Casey Luskin, "Response to the NCSE's Reply to *Explore Evolution* on Natural Selection," *Explore Evolution*, 2 March 2010, https://exploreevolution.com/2010/03/02/response_to_the_ncses_reply_to/ : 7 November 2025.

[725] Stephen C. Meyer, Paul A. Nelson, Jonathan Moneymaker, Scott Minnich, and Ralph Seelke, *Explore Evolution: The Arguments for and Against Neo-Darwinism*, 1st UK ed. (Melbourne and London: Hill House Publishers, 2009), 95.

to 'positive selection' that purport to explain how the gene arose. But exactly how the gene arose is never explained."[726]

Meis: "Macroevolution is the summation of microevolution. It follows that **information gain is essentially the summation of information loss**. One may wonder whether such a nonsensical explanation does not itself seem extremely unsatisfactory to evolutionists."[727]

Leisola: "There is a developing consensus even within the mainstream evolutionary community that macroevolution did not come about as a result of a summation of microevolutionary changes."[728]

Davis & Kenyon: "Macroevolution requires an increase of the gene pool, the addition of new genetic information."[729]

"Of course, change that occurs through the loss of information must soon come to an end."[730]

Lönnig: "Living beings are, in fact, highly integrated, functional systems (all parts being correlated with limited space or tolerance concerning functional variation), which permits microevolution generating intermediate forms to a certain extent, but precludes infinite transformations."[731]

G. Kemper, H. Kemper, & Luskin: "Biological macro-systems show the kind of integrated complexity that, in our everyday experience, we immediately recognize as the result of engineering design."[732]

19.2.5 The Logic of Single-Case Design Inference

Dembski & Ewert: "To demonstrate design in biology, it's not necessary to show that all aspects of biological systems are designed. Even one unequivocal case of design in biology would be enough. Naturalistic biologists, by contrast, maintain that every aspect of every biological system gives no evidence of actual design. To refute this claim, logic only requires showing that some biological system, even just one, gives solid evidence of actual design."[733]

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[726] Casey Luskin, "Response to the NCSE's Reply to *Explore Evolution* on Natural Selection," *Explore Evolution*, 2 March 2010, https://exploreevolution.com/2010/03/02/response_to_the_ncses_reply_to/ : 7 November 2025.
[727] Karl Friederich Meis, "Kritikpunkt 9," *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, last updated 4 April 2024, https://www.intelligentdesigner.de/kritikpunkt-9/ : accessed 29 August 2025. Quoted passage translated from German.
[728] Matti Leisola, quoted in Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 406; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025.
[729] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 19.
[730] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 85.
[731] Wolf-Ekkehard Lönnig, *The Evolution of the Long-Necked Giraffe (Giraffa camelopardalis L.): What Do We Really Know? Testing the Theories of Gradualism, Macromutation, and Intelligent Design* (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2011), 25 [PDF p. 37]; digital file, https://ad-multimedia.de/evo/long-necked-giraffe_mU.pdf : accessed 4 November 2025.
[732] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 126.
[733] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 331.

Luskin: "**Molecular machines are highly complex and in many cases we are just beginning to understand their inner workings. As a result, while we know that many complex molecular machines exist, to date only a few have been studied sufficiently by biologists so that they have directly tested for irreducible complexity through genetic knockout experiments or mutational sensitivity tests.**"[734]

Joshua: Luskin, you provide the following list of molecular machines that may turn out to be irreducibly complex:

1. Spliceosome
2. F0F1 ATP Synthase
3. Bacteriorhdopsin
4. Myosin
5. Kinesin Motor
6. Tim/Tom Systems
7. Calcium Pump
8. Cytochrome C Oxidase
9. Proteosome
10. Cohesin
11. Condensin
12. ClpX
13. Immunological Synapse
14. Glideosome
15. Kex2
16. Hsp70
17. Hsp60
18. Protein Kinase C
19. SecYEG PreProtein Translocation Channel
20. Hemoglobin
21. T4 DNA Packaging Motor
22. Smc5/Smc6
23. Cytplasmic Dynein
24. Mitotic Spindle Machine
25. DNA Polymerase
26. RNA Polymerase
27. Kinetochore
28. MRX Complex
29. Apoptosome / Caspase
30. Type III Secretory System
31. Type II Secretion Apparatus
32. Helicase/Topoisomerase Machine
33. RNA degradasome
34. Photosynthetic system

Dembski: "There are plenty of complex biological systems for which no biologists has a clue how they emerged. I'm not talking about handwaving just-so stories. Biologists have plenty of those. I'm talking

[734] Casey Luskin, "Molecular Machines in the Cell," 11 June 2010, https://caseyluskin.com/2010/06/11/molecular-machines-in-the-cell/ : accessed 14 November 2025.

about detailed, testable, accounts of how such systems could have emerged."[735]

"Science cannot explain a phenomenon by appealing to the promise, prospect or possibility of future evidence. In particular, unknown mechanisms or undiscovered ways by which those mechanisms operate cannot be invoked to explain a phenomenon. If known mechanisms can be shown incapable of explaining a phenomenon, then it is an open question whether any mechanisms whatsoever are capable of explaining it. If, further, good reasons exist for asserting the specified complexity of certain biological systems, then design itself becomes assertible in biology."[736]

"Evolutionary biologists cannot even justify looking to future evidence by pointing to current progress because they have not made any meaningful progress accounting for biological complexity."[737]

19.2.7 What Counts as Science: Methodological Naturalism and Intelligent Design

Swift: "Although it is generally supposed that any non-natural cause must by definition be outside science, I suggest that admitting the possibility of such causes is in fact consistent with the scientific approach in its widest sense. When scientists come across observations which cannot be accounted for by current scientific theories, they will explore various alternative hypotheses and may, as a result, discover a completely new type of phenomenon compared with preceding knowledge. . . . Scientists should be open to the possibility that an explanation lies outside their current understanding; and probably most are. However that 'openness' is usually limited to exclusively natural phenomena. The reason for this is that natural phenomena have been found to explain so much that almost all scientists expect everything to be explicable in such terms. But that is not a reliable argument. A conclusion from induction should be open to scrutiny: it should not take precedence over observation but be subject to revision in the light of observation. A more scientific approach would be to have an outlook that is open to the unexpected."[738]

Woodward: "Science has typically been defined—in line with the Darwinian 'no design' rule—as the search for the 'natural causes' of all phenomena (ID would substitute the phrase 'real causes')."[739]

DeWolf, West, Luskin, and Witt: "The boundaries of science are not established by science itself but by philosophy, and the fascinating question of what constitutes science has vexed philosophers of science for many years."[740]

Meyer: "Philosophers of science, the scholars who study the nature and definition of science, now almost universally reject the use of demarcation arguments to decide the validity of theories or settle

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[735] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 276.
[736] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 110.
[737] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 113.
[738] David W. Swift, *Evolution Under the Microscope: A Scientific Critique of the Theory of Evolution* (Leighton, UK: Leighton Academic Press, 2002), 405.
[739] Thomas Woodward, *Darwin Strikes Back: Defending the Science of Intelligent Design* (Grand Rapids, MI: Baker Books, 2006), 53.
[740] David K. DeWolf, John G. West, Casey Luskin, and Jonathan Witt, *Traipsing into Evolution: Intelligent Design and the Kitzmiller v. Dover Decision* (Seattle: Center for Science and Culture, Discovery Institute Press, 2006), 25.

competition between them. . . .

". . . The question of whether a theory is 'scientific' is a red herring. What we really want to know is whether a theory is true or false, supported by the evidence or not, worthy of belief or not. We cannot decide those questions by applying a set of abstract criteria that purport to tell in advance what all good scientific theories must look like."[741]

Lönnig: "'*The truth, the whole truth and nothing but the truth*' must, in my opinion, remain the guiding principle and the goal for all sciences."[742]

Nelson: "Science ought to be a search for the truth about the world. Now, we shouldn't prejudge what might be true. We shouldn't say, 'I don't like that explanation, so I'm gonna put it to one side.' Rather, when we come to a puzzle in nature, we ought to bring to that puzzle every possible cause that might explain it."[743]

Meyer: "The 'rules of science' should not commit us to rejecting possibly true theories before we even consider the evidence. But that is exactly what methodological naturalism does."[744]

Wells: "Science can mean testing hypotheses by comparing them with evidence. It's a search for the truth. That's the science I love. But there's another kind of science that has become popular nowadays and that's finding materialistic explanations for everything. That's materialistic science not empirical science. For empirical science the evidence matters the most. For materialistic science, the story matters the most."[745]

Behe: "Science is not a game, and science should follow the physical evidence wherever it leads, with no artificial restrictions."[746]

Wells: "There is no doubt that [materialistic philosophy] is being imposed on the evidence rather than inferred from it."[747]

Richards: "At the beginning of the 21st century, we have new evidence and new intellectual tools at our disposal. Standing in the way is the materialistic definition of science inherited from the Victorian Age. If a definition of science conflicts with the scientific evidence, should we go with the definition or the evidence?

"To ask the question is to answer it. 'Scientia' means knowledge. If we are properly scientific, then we

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[741] Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (New York: HarperOne, 2013), 388–389.
[742] Wolf-Ekkehard Lönnig, correspondence to Mr. Q (pseudonym), 2 December 1998, published in "4) Gregor Mendel, Archaeopteryx und die Giraffe," in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/Giraffe.html : accessed 4 November 2025. Quoted passage translated from German.
[743] Paul Nelson, "The Design Inference," chapter 11, in *Unlocking the Mystery of Life: The Scientific Case for Intelligent Design*, directed by Lad Allen and Timothy Eaton (La Mirada, California: Illustra Media, 2002), DVD, timestamp 51:04–51:24.
[744] Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (New York: HarperOne, 2013), 398–399.
[745] Jonathan Wells, quoted in Granville Sewell, "The Mystery of Evolution May Be Unsolvable — By Materialist Science," *Science and Culture Today*, October 2, 2024, https://scienceandculture.com/2024/10/the-mystery-of-evolution-may-be-unsolvable-by-materialist-science/ : accessed October 29, 2025.
[746] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 243.
[747] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 207.

should be open to the natural world, not decide beforehand what it's allowed to reveal. Either the universe provides evidence for purpose and design or it doesn't. The way to resolve the question isn't to play definitional games but to look."[748]

Hunter: "Evolution does not follow the evidence, it follows a rule. . . . Evolutionists must adhere to a strictly naturalistic origins story, regardless of the evidence."[749]

Johnson: "It is necessary to distinguish between the dictates of materialist philosophy and the inferences that one might legitimately draw from the evidence in the absence of a materialist bias. . . .

". . . People who claim to be basing their ideology on observation or neutral reasoning are actually proceeding on the basis of powerful hidden assumptions. . . .

". . . In arguing that we should distinguish between objective empirical testing on the one hand and deductive reasoning from materialist philosophical assumptions on the other, we are making a point of elementary logic that is irresistible once it is understood."[750]

Remine: "Evolutionists are not committed to science. They are committed to [naturalism]."[751]

"From beginning to end, their program is driven by an unrelenting commitment to naturalism, at the expense of science."[752]

Kenyon: "I came to be a dissenter to scientific materialism by looking at the origin of life experiments, including experiments of mine. My transition was from the empirical sciences, through an analysis of the empirical data in origins science, including the paleontological evidence. I grew increasingly uncomfortable presenting conclusions to my students that weren't backed up by the empirical data."[753]

Johnson: "When the philosophy conflicts with the evidence, real scientists follow the evidence."[754]

Hunter: "What scientific experiment or finding has shown that the success and legitimacy of science hinges on strict naturalism? Or again, what experiment shows that accuracy and truth are to be found only in naturalism?"[755]

Leisola: "If something possesses a common hallmark of intelligent design—namely the sophisticated

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[748] Jay W. Richards, "What Intelligent Design Is — and Isn't," *Intelligent Design*, https://intelligentdesign.org/articles/what-intelligent-design-is-and-isnt/ accessed 14 November 2025.
[749] Cornelius Hunter, "Is Intelligent Design a Science Stopper?" *Science and Culture Today*, 11 February 2022, https://scienceandculture.com/2022/02/is-intelligent-design-a-science-stopper/ : accessed 29 October 2025.
[750] Phillip E. Johnson, "The Wedge: Breaking the Modernist Monopoly on Science," *Access Research Network*, 1999, https://arn.org/docs/johnson/le_wedge.htm : accessed 26 December 2025.
[751] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 56n40. The original quote reads: "Evolutionists are not committed to science. They are committed to "natural" selection." Remine calls naturalism "'natural' selection." See page 55, including 55–56n40.
[752] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 468.
[753] Dean Kenyon, quoted in Jonathan Witt, "Dover Judge Regurgitates Mythological History of Intelligent Design," *Science and Culture Today*, December 20, 2005, https://scienceandculture.com/2005/12/post_6/ : accessed 29 October 2025.
[754] Phillip E. Johnson, "The Wedge: Breaking the Modernist Monopoly on Science," *Access Research Network*, 1999, https://arn.org/docs/johnson/le_wedge.htm : accessed 26 December 2025.
[755] Cornelius Hunter, "Is Intelligent Design a Science Stopper?" *Science and Culture Today*, 11 February 2022, https://scienceandculture.com/2022/02/is-intelligent-design-a-science-stopper/ : accessed 29 October 2025.

arrangement of parts that accomplishes some striking purpose—one cannot rationally refute the design hypothesis simply by ruling that explanation out of court from the outset."[756]

Meis: "To exclude a possible explanation in advance is tantamount to an approach that is not open to knowledge, which can also be called dogmatism."[757]

Gonzalez & Richards: "If science involves thinking hard and open-mindedly about the empirical evidence before us, is it really scientific to ignore this evidence because it doesn't fit into some philosophical box?"[758]

Wells: "The Darwinists cannot allow any hint of design in living things. They have to exclude every possible aspect of design. And this narrows the range of explanations tremendously, and it forces them to cram the data into these boxes that end up distorting the truth."[759]

Hunter: "Consider a box with an internal divider such that the box is divided into two separate compartments, A and B. The box represents the set of all possible scientific explanations. Compartment A contains explanations that are strictly naturalistic, while compartment B contains explanations that are not strictly naturalistic.

"Evolutionists are saying that not only are they limited to Compartment A, but that as a matter of principle all of science must necessarily be so limited. Compartment B must be strictly off limits.

"But what if there is something in Compartment B? If there is, then evolutionists can never know it."[760]

Leisola: "Methodological materialism poses as 'the scientific method'—empirical, neutral, disinterested. But this isn't the case. It is not a neutral way to observe the world. It dogmatically limits possible answers. The possibility that life has been designed is deemed out of the question."[761]

Lönnig & Meis: "The ID theory is much less a religious or quasi-religious dogma than is naturalism. Rather, it is a non-dogmatic, rational method of approaching the truth."[762]

Miller: "Materialism . . . is a demanding master, forcing its followers to embrace any theory, regardless

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[756] Matti Leisola and Jonathan Witt, *Heretic: One Scientist's Journey from Darwin to Design* (Seattle: Discovery Institute Press, 2018), 44.

[757] Karl-Friedrich Meis, "Was ist Intelligent Design?" *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, https://www.intelligentdesigner.de/was-ist-intelligent-design/ : accessed 7 November 2025. Quoted passage translated from German.

[758] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), 292. Gonzalez and Richards adduce evidence against the philosophical idea known as the Copernican Principle. The quoted passage is written in this context.

[759] Jonathan Wells, response to question 13, "What potential benefits does Intelligent Design Theory hold for science?," bonus feature "Darwin & Design: Questions & Answers," in *Unlocking the Mystery of Life: The Scientific Case for Intelligent Design*, directed by Lad Allen and Timothy Eaton (La Mirada, California: Illustra Media, 2002), DVD.

[760] Cornelius Hunter, "Is Intelligent Design a Science Stopper?" *Science and Culture Today*, 11 February 2022, https://scienceandculture.com/2022/02/is-intelligent-design-a-science-stopper/ : accessed 29 October 2025.

[761] Matti Leisola and Jonathan Witt, *Heretic: One Scientist's Journey from Darwin to Design* (Seattle: Discovery Institute Press, 2018), 47.

[762] Wolf-Ekkehard Lönnig and Frieder Meis, "Intelligent Design (ID) liefert wissenschaftliche Erklärungen: Methodologische Bemerkungen zu einem klaren Verhältnis (Erste Diskussionsrunde)," *Religion – Staat – Gesellschaft: Journal for the Study of Beliefs and Worldviews*, vol. 7, no. 2 (2006) (published 25 May 2007), https://www.weloennig.de/RSGID1.html : accessed 12 November 2025. Quoted passage translated from German.

of how implausible, in order to deny that this appearance of design and purpose is real."[763]

Luskin: "By presupposing that material causes are correct in all cases, they are blinded even to the possibility of non-material causation. They thus perceive anyone who is not similarly blinded as being biased or promoting 'faith-based' ideas. If you even allow the *possibility* of design, in their minds, you're promoting faith. In reality, these materialists are the ones who are 'faith-based.' Before weighing the evidence, they assume that nature is material causes all the way down."[764]

D. Witt: "Most people are concerned with the truth, and would rather not assume the answers to the most important questions. A strictly naturalistic methodology is ultimately unproductive for assessing any phenomenon that doesn't have a strictly naturalistic explanation, and it has no way of determining what those phenomena are, or whether they exist. So if we want to move forward in cases that might *not* have naturalistic explanations, or even decide what those cases are, we need to adopt a broader investigative methodology."[765]

Hunter: "The problem with science today is not that the naturalistic approach might occasionally be inadequate. The problem is that science would never know any better. This is science's blind spot. When scientific problems arise, it is always assumed that the correct naturalistic explanation has not yet been found."[766]

Nelson & Wells: "Someone who finds a watch on the ground, and wants to investigate its origin, would be mistaken to rule out design *a priori*. Having already jumped to the wrong conclusion, that person might go on to waste an entire lifetime dabbling in spurious explanations. If science is truth-seeking, then this is a strange way to do science."[767]

D. Witt: "Suppose the real explanation lies in the 'off the table' category of answers? . . . Should any scientist spend his or her whole life looking for a type of answer that doesn't exist? At what point do we start considering the off-limit options?"[768]

Minnich: "I think design is back on the table. We can't explain these systems by natural law. And if we're searching for the truth, and they are in fact designed—if you have to be design engineers to understand them—then I say, 'What's the problem?' You go where the data leads ya. And the implications? Yeah, they have profound metaphysical implications, but, so be it."[769]

Leisola: "While the causation of higher level order in biology remains inexplicable in Darwinian terms

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[763] Brian Miller, "Robert Wright Asks: Can Evolution Have a Higher Purpose?" *Science and Culture Today*, January 16, 2017, https://scienceandculture.com/2017/01/robert_wright_a/ : accessed October 29, 2025.
[764] Casey Luskin, "Answering a Common Complaint: Does Intelligent Design Require Faith?" *Science and Culture Today*, May 26, 2015, https://scienceandculture.com/2015/05/answering_a_com/ : accessed October 29, 2025.
[765] Daniel Witt, "Are Scientists Allowed to Consider Unscientific Explanations?" *Science and Culture Today*, 10 July 2025, https://scienceandculture.com/2025/07/are-scientists-allowed-to-consider-unscientific-explanations/ : accessed 29 October 2025.
[766] Cornelius Hunter, "Science's Blind Spot Is Still There," *Science and Culture Today*, June 30, 2008, https://scienceandculture.com/2008/06/sciences_blind_spot_is_still_t/ : accessed October 29, 2025.
[767] Jonathan Wells and Paul Nelson, "Homology: A Concept in Crisis," *Origins & Design* 18, no. 2 (1997), https://arn.org/docs/odesign/od182/hobi182.htm accessed 14 November 2025.
[768] Daniel Witt, "Aliens in the Garbage," *Science and Culture Today*, March 11, 2024, https://scienceandculture.com/2024/03/aliens-in-the-garbage/ : accessed October 29, 2025.
[769] Scott Minnich, "The Design Inference," chapter 11, in *Unlocking the Mystery of Life: The Scientific Case for Intelligent Design*, directed by Lad Allen and Timothy Eaton (La Mirada, California: Illustra Media, 2002), DVD, timestamp 1:02:58–1:03:25.

it is time to reconsider seriously the possibility of design."[770]

Rammerstorfer: "If the [evolutionary] explanation intended to expose the impression of planning as an illusion turns out to be itself susceptible to illusion, then we are dealing with a resurrection of that same impression."[771]

Thaxton: "Suppose we are detectives investigating someone's death. Is this a case of death by natural causes (accident) or death by design (murder or suicide)? We do not know the answer in advance. We must investigate to find out. If we announced before beginning our investigation that death must have been accidental (natural), others would be justified in objecting that we had illegitimately restricted the field of possible causes. An important purpose of the investigation is to determine whether this was a case of intelligent cause (murder or suicide) or natural death. We need a method that is open to either possibility."[772]

Behe: "Imagine a room in which a body lies crushed, flat as a pancake. A dozen detectives crawl around, examining the floor with magnifying glasses for any clue to the identity of the perpetrator. In the middle of the room next to the body stands a large, gray elephant. The detectives carefully avoid bumping into the pachyderm's legs as they crawl, and never even glance at it. Over time the detectives get frustrated with their lack of progress but resolutely press on, looking even more closely at the floor. You see, textbooks say detectives must 'get their man,' so they never consider elephants.

"There is an elephant in the roomful of scientists who are trying to explain the development of life. The elephant is labeled 'intelligent design.' To a person who does not feel obliged to restrict his search to unintelligent causes, the straightforward conclusion is that many biochemical systems were designed."[773]

Meyer: "Theories that gain acceptance in artificially constrained competitions can claim to be neither 'best' nor 'most probably true.'"[774]

"Defining science as a strictly materialistic enterprise commits scientists to an unjustified—and possibly false—view of biological origins. It is at least logically possible that a personal agent—a conscious goal-directed intelligence—existed before the appearance of the first life on earth."[775]

"It remains logically possible that an 'unscientific' hypothesis (according to methodological naturalism) might constitute a better explanation of the evidence than the currently best 'scientific' hypothesis. .

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[770] Matti Leisola, quoted in Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 406; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025.

[771] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 49. Quoted passage translated from German.

[772] Charles Thaxton, "Appendix 2: 1997 Update," in Charles B. Thaxton, Walter L. Bradley, Roger L. Olsen, James Tour, Stephen Meyer, Jonathan Wells, Guillermo Gonzalez, Brian Miller, and David Klinghoffer, *The Mystery of Life's Origin: The Continuing Controversy* (Seattle: Discovery Institute Press, 2020), 313.

[773] Michael J. Behe, "Molecular Machines: Experimental Support for the Design Inference," *Discovery Institute*, 1 March 1998, https://www.discovery.org/a/54/ : accessed 29 October 2025.

[774] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 438.

[775] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 437.

. . *Reclassifying an argument does not refute it*."[776]

Eberlin: "There must be a better, more general definition for science. And indeed there is: *Science is a systematic and unbiased search for knowledge about nature.* Under this definition, we are free to think, investigate, doubt, and conclude based on whatever evidence we have. The underlying principles of science are freedom of thought and speech, guided by data collected using systematic methods. If science—the search for absolute truths hidden within nature—is to be considered an unflinchingly truth-directed endeavor, reason and evidence must be the only constraints."[777]

Meyer: "I discovered that though it was difficult to define science by reference to a single definition or set of methodological criteria, it was not difficult to define science in such a way that either acknowledged the diversity of methodological practices or refused to specify which method made a discipline scientific. Such an approach allows science to be defined more broadly as, for instance, 'a systematic way of studying nature involving observation, experimentation, and/or reasoning about physical phenomena.'"[778]

"Since the term 'science' commonly connotes an activity in which theories are developed to explain observations of the natural world, the empirical, observational basis of the theory of intelligent design provides a good reason for regarding intelligent design as a scientific theory."[779]

"I discovered that although it was impossible to describe the rich variety of scientific methods with a single definition, it was possible to characterize the methodological practices of specific disciplines or types of science."[780]

"The theory of intelligent design exhibits each of the main features of a historical science, suggesting another reason to regard it as scientific."[781]

Luskin: "The theory of intelligent design (ID) states that some natural phenomena are best explained by an intelligent cause because, in our experience, intelligence is the cause of their informational properties. Intelligent design thus begins with observations about the kinds of information that are produced when intelligent agents act. . . .

". . . Intelligent design is . . . based upon our present empirical understanding of the cause-and-effect relationship between intelligent agents and the production of new information."[782]

Meyer: "Many would admit that we may justifiably infer a past human intelligence operating (within

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[776] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 435.

[777] Marcos Eberlin, *Foresight: How the Chemistry of Life Reveals Planning and Purpose*, Kindle edition (Seattle: Discovery Institute Press, 2019), 43. Page number reflects the Kindle edition mapped to ISBN 1936599651 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "there must"; for print readers, the page number provides approximate placement.

[778] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 402.

[779] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 403.

[780] Stephen C. Meyer, "Sauce for the Goose: Intelligent Design, Scientific Methodology, and the Demarcation Problem," 15 February 2011, https://stephencmeyer.org/2011/02/15/sauce-for-the-goose/ : 12 November 2025.

[781] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 410.

[782] Casey Luskin, "Finding Intelligent Design in Nature," in H. Wayne House, ed., *Intelligent Design 101: Leading Experts Explain the Key Issues* (Grand Rapids, MI: Kregel Publications, 2008), 69.

the scope of human history) from an information-rich artifact or event, but only because we already know that human minds exist. But, they argue, since we do not know whether an intelligent agent(s) existed prior to humans, inferring the action of a designing agent that antedates humans cannot be justified, even if we observe an information-rich effect. Note, however, that SETI scientists do not already know whether an extraterrestrial intelligence exists. Yet they assume that the presence of a large amount of specified information (or even just an unnaturally modulated radio signal) would establish the existence of one. Indeed, SETI seeks precisely to establish the existence of other intelligences in an unknown domain. Similarly, anthropologists have often revised their estimates for the beginning of human history or civilization, because they discovered information-rich artifacts dating from times that antedate their previous estimates. Most inferences to design establish the existence or activity of a mental agent operating in a time or place where the presence of such an agency was previously unknown. Thus, to infer the activity of a designing intelligence from a time prior to the advent of humans on earth does not have a qualitatively different epistemological status than other design inferences that critics already accept as legitimate."[783]

Behe: "The conclusion that some features of life were designed can be made in the absence of knowledge about when the designing took place. A child who looks at the faces on Mt. Rushmore immediately knows that they were designed but might have no idea of their history; for all she knows, the faces might have been designed the day before she got there, or might have been there since the beginning of time. An art museum might display a statue of a bronze cat purportedly made in Egypt thousands of years ago—until the statue is examined by technologically advanced methods and shown to be a modern forgery. In either case, though, the bronze cat was certainly designed by an intelligent agent."[784]

Davis & Kenyon: "When scientists probed the nucleus of the cell, they eventually stumbled upon a phenomenon akin to finding 'John loves Mary' written in the sand, or 'Vote for Smedley' written in the sky. The greatest difference is that the DNA text is much more complex. . . .

". . . If science is based upon experience, then science tells us the message encoded in DNA must have originated from an intelligent cause."[785]

Bradley, Olsen, & Thaxton: "We have observational evidence in the present that intelligent investigators can (and do) build contrivances to channel energy down nonrandom chemical pathways to bring about some complex chemical synthesis, even gene-building. May not the principle of uniformity then be used in a broader frame of consideration to suggest that DNA had an intelligent cause at the beginning?"[786]

Durston: "Highly significant levels of functional information encoded within the genomes of life provides strong evidence that the digital software we observe within the DNA of all plants and animals came from an intelligent programmer.

"Note that this is not an argument based on ignorance — 'We don't know what can write computer

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[783] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 542n35.
[784] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 227.
[785] Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 7.
[786] Charles B. Thaxton, Walter L. Bradley, and Roger L. Olsen, in Charles B. Thaxton, Walter L. Bradley, Roger L. Olsen, James Tour, Stephen Meyer, Jonathan Wells, Guillermo Gonzalez, Brian Miller, and David Klinghoffer, *The Mystery of Life's Origin: The Continuing Controversy*, Part 1 (Seattle: Discovery Institute Press, 2020), 284.

code, therefore God did it.' Quite the contrary; it is based on the observation that intelligent minds can write digital software. It follows from this that a highly probable candidate for the functional information encoded in DNA is an intelligent mind."[787]

Dembski & Ewert: "The gene consists of a sequence of four types of nucleotide bases. The protein consists of a sequence of twenty types of amino acids. Both the nucleotide bases and the amino acids here are akin to the letters of an alphabet."[788]

Tour: "The information or coding within the DNA or RNA that corresponds to the sequence of the nucleotides is essential to the entire discussion of life's origin. Some would rightly argue that the information is even more fundamental than the matter (molecules) upon which it is encoded. . . .

". . . The code vs. the molecules is analogous to the difference between the Library of Congress and a box of alphabetic letters—the library (DNA or RNA) has a huge amount of embedded information while the random box of letters (molecules) has little."[789]

Meyer: "Intelligent human agents—in virtue of their rationality and consciousness—have demonstrated the power to produce information in the form of linear sequence-specific arrangements of characters. Indeed, experience affirms that information of this type routinely arises from the activity of intelligent agents. A computer user who traces the information on a screen back to its source invariably comes to a *mind*—that of a software engineer or programmer. The information in a book or inscription ultimately derives from a writer or scribe—from a mental, rather than a strictly material, cause. Our experience-based knowledge of information-flow confirms that systems with large amounts of specified complexity (especially codes and languages) invariably originate from an intelligent source—from a mind or personal agent. As Quastler . . . put it, the 'creation of new information is habitually associated with conscious activity.' . . . Experience teaches this obvious truth.'"[790]

Lönnig & Meis: "Information-bearing code transports intelligence and therefore has intelligence as its cause."[791]

D. Johnson: "Microsoft founder Bill Gates writes: *'Human DNA is like a computer program but far, far more advanced than any software we've ever created*.' . . . Can you imagine how believable it would be if someone were to suggest that the Windows 7 operating system just arose by natural processes

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[787] Kirk Durston, "Fingerprints of an Intelligent Programmer: The 'Entropy = Information' Mistake," *Science and Culture Today*, May 3, 2017, https://scienceandculture.com/2017/05/fingerprints-of-an-intelligent-programmer-the-entropy-information-mistake/ : accessed October 29, 2025.

[788] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 428.

[789] James M. Tour, "We're Still Clueless About the Origin of Life," in Charles B. Thaxton, Walter L. Bradley, Roger L. Olsen, James Tour, Stephen Meyer, Jonathan Wells, Guillermo Gonzalez, Brian Miller, and David Klinghoffer, *The Mystery of Life's Origin: The Continuing Controversy* (Seattle: Discovery Institute Press, 2020), 348.

[790] Stephen C. Meyer, "The Origin of Biological Information and the Higher Taxonomic Categories," *Proceedings of the Biological Society of Washington* 117, no. 2 (2004), 232–233. Reprinted without pagination and footnotes at *Discovery Institute*, https://www.discovery.org/a/2177 : accessed 9 November 2025.

[791] Wolf-Ekkehard Lönnig and Frieder Meis, "Intelligent Design (ID) liefert wissenschaftliche Erklärungen: Methodologische Bemerkungen zu einem klaren Verhältnis (Erste Diskussionsrunde)," *Religion – Staat – Gesellschaft: Journal for the Study of Beliefs and Worldviews*, vol. 7, no. 2 (2006) (published 25 May 2007), https://www.weloennig.de/RSGID1.html : accessed 12 November 2025. Quoted passage translated from German.

without intelligence?"[792]

Luskin: "Bill Gates was exactly right when he said that 'DNA is like a computer program but far, far more advanced than any software ever created.' What Mr. Gates didn't say is that there's also programming-like conditional logic at work throughout living cells that's beyond the DNA. . . . This conditional programming logic is frequently performed by components that are not necessarily 'in' the DNA sequence itself, but rather by components that are themselves encoded by the programming in the DNA. These components go out into the cell and execute conditional logic to control gene regulation and many other systems.

". . . In our experience, what cause generates conditional logic circuits, and then what cause re-uses those algorithmic programs over and over in different systems? The field of computer programming teaches us that it's not blind evolution; it's intelligence."[793]

Lönnig & Meis: "Software has been written by humans to control the microprocessors developed by humans. Is it then surprising that the ID theory has put forward the thesis that genetic code was written by the inventor of the cell to control it?"[794]

Rammerstorfer: "In many areas, biology is viewed as strongly analogous to technology, and recent research has given further impetus to this view. Some researchers even refer to biological constructions bluntly as technology."[795]

Lönnig: "When dealing with the question of the origin of organic structures the following must be considered:

The same principles of construction and function as occur in the cybernetic systems in technology are found in the kind of linkage and interplay in organisms."[796]

"The fact that machines are made of other materials does not change the basic principles (the laws of construction, non-rotational kinematics, information transmission), nor the way information is stored. . . .

". . . [W. Nachtigall] writes about 'biological constructions': 'There is also no fundamental difference in the consideration of biological and technical structures from the point of view of construction principles. The design principle of a certain typewriter type is a 6-link kinematic composite chain with two common links. The design principle of the opening mechanism of a particular fish's mouth is also a 6-link kinematic chain with two common links. It makes no difference whether the executed construction works with steel, springs and oil, or with bones, muscles and blood: the principle of

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[792] Donald E. Johnson, *Probability's Nature and Nature's Probability: A Call to Scientific Integrity* (Charleston, SC and Lexington, KY: BookSurge Publishing, updated October 2010), 28.

[793] Casey Luskin, "My Conversation with Denis Noble and Perry Marshall About Evolution and Intelligent Design," *Science and Culture Today*, 31 July 2025, https://scienceandculture.com/2025/07/my-conversation-with-denis-noble-and-perry-marshall-about-evolution-and-intelligent-design/ : accessed 29 October 2025.

[794] Wolf-Ekkehard Lönnig and Frieder Meis, "Intelligent Design (ID) liefert wissenschaftliche Erklärungen: Methodologische Bemerkungen zu einem klaren Verhältnis (Erste Diskussionsrunde)," *Religion – Staat – Gesellschaft: Journal for the Study of Beliefs and Worldviews*, vol. 7, no. 2 (2006) (published 25 May 2007), https://www.weloennig.de/RSGID1.html : accessed 12 November 2025. Quoted passage translated from German.

[795] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 15. Quoted passage translated from German.

[796] Wolf-Ekkehard Lönnig, "English Summary (Facts and Polemics)," in *Auge widerlegt Zufalls-Evolution: Ein paar Fakten und Zitate zur Problematik des Neodarwinismus und zum Beweis der Intelligent Design-Theorie*, online edition, https://www.weloennig.de/AuIEng.html : accessed 3 November 2025.

construction remains the same. It is the same, because the same laws underlie the constructions, and because the special kind in the mutual coordination of the structural components is the same.'"[797]

Rammerstorfer: "It is not based on a superficial similarity that organisms can be understood so well by analogy with human technology. Organisms share one essential aspect with technology: teleology. Organisms as a whole act in a highly goal-oriented manner—from the molecular level to the realm of behavior."[798]

Scherer & Keim: "Perhaps the most important difference between biological and technical information is that living beings reproduce. Not only do they perform many functions (as a computer can), but they are also designed to create copies of themselves. As a technical comparison, one would have to construct a computer that is simultaneously a computer factory and creates copies of itself. The replication process is designed in such a way that the resulting copies are not identical to the sequences of the parents. This phenomenal property of life is the prerequisite for the ability for microevolution."[799]

Rammerstorfer: "'Multi-generation systems' are considerably more complicated than 'single-generation systems': They are capable of reproducing themselves independently—without external assistance. Today, we are increasingly aware of the complexly organized and teleologically structured processes responsible for this phenomenon. Human technology to date has not produced any 'multi-generational systems' seriously comparable to those of organisms. The ability to reproduce and vary would therefore be classified as evidence of highly developed engineering and celebrated as an epochal breakthrough."[800]

Meis: "What is more likely: the emergence of a house or the emergence of a first living being that can reproduce? One could also ask in this way: What is more likely: the emergence of a house or the emergence of a house that can reproduce itself, i.e. a house that is still alive? It's easy to see that the reproductive functionality is so extremely complex that it is orders of magnitude apart from the complexity of a normal house. The accidental origin of a house that is not capable of reproduction is thus far more probable than the accidental origin of a first living being capable of reproduction. But since the accidental origin of a house (based on uncontrolled laws of nature) is entirely ruled out, why should the far more improbable emergence of a first reproductive living being be more likely?

". . . If the simple, i.e. non-reproducible objects, did not come into being by itself, then the complex, namely the first living being capable of reproduction, could certainly not come into being by itself."[801]

Lönnig: "If the relatively simple, but fundamentally similar systems always arise through intelligent

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[797] Wolf-Ekkehard Lönnig, "Der Artbegriff der Schöpfungslehre," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesIV4.html : accessed 2 November 2025. Quoted passage translated from German.

[798] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 23. Quoted passage translated from German.

[799] Siegfried Scherer und Daniel Keim, "Entstehung biologischer Information unter präbiotischen Bedingungen?" in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 115. Quoted passage translated from German.

[800] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 48. Quoted passage translated from German.

[801] Karl Friederich Meis, "Kritikpunkt 5," *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, https://www.intelligentdesigner.de/kritikpunkt-5/ : accessed 26 August 2025. Quoted passage translated from German.

design, how much more so those that are a thousand times more complex!”[802]

Bradley: “Polanyi argues that living systems are far more complicated than the machines of people and thus provide an even greater challenge to the observer to explain their [existence] in terms of natural laws alone.”[803]

Luskin: “The positive case for design begins with observations of intelligent agents and what they produce when they design things.”[804]

DeWolf, West, & Luskin: “Human intelligence provides a large empirical dataset for studying the products of the action of intelligent agents.”[805]

Luskin: “This leads to hypotheses (predictions) about what we should expect to find if intelligent agency was involved in the origin of a structure. These predictions are testable via studies of nature — often called *experiments* — but in this case meaning any empirical study of what exists in the natural world. Depending upon the outcome of the experiments and the nature of the data, the hypothesis/prediction is either confirmed or not. This leads to a (tentative) conclusion about whether design has been detected in nature.”[806]

“While the precise definition of science may be unclear, and the exact boundary between science and non-science blurry, most would agree there are certain qualities that clearly place some ideas on the side of science. One of those is the scientific method. If an idea uses the scientific method to make its claims, it’s very likely that the idea is scientific. Of course, a scientific idea may also be mistaken.

“We can know ID is science because it uses the scientific method to make its claims.”[807]

Dembski: “Because intelligent design adds rather than removes tools from the biologist’s tool chest (supplementing material mechanisms with intelligent agency), intelligent design can subsume present biological research.”[808]

Widenmeyer: “The design approach . . . is broadly based in its search for causes of the emergence of observed natural phenomena and considers both lawfully describable processes and the possibility of goal-oriented interventions. It can handle both planning and explanations by means of mere

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[802] Wolf-Ekkehard Lönnig, *Die Evolution der karnivoren Pflanzen: Was die Selektion nicht leisten kann – das Beispiel Utricularia (Wasserschlauch)*, 3rd improved edition (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2012), 156 [PDF p. 170]; digital file, https://www.weloennig.de/Utricularia2011Buch.pdf : accessed 9 December 2025. Quoted passage translated from German.

[803] Walter Bradley, “Designed or Designoid,” *Discovery Institute*, 11 May 1998, https://www.discovery.org/a/18157/ : accessed 29 October 2025.

[804] Casey Luskin, “Outlining Intelligent Design’s Positive Argument,” *Science and Culture Today*, April 27, 2022, https://scienceandculture.com/2022/04/outlining-intelligent-designs-positive-argument/ : accessed October 29, 2025.

[805] David K. DeWolf, John G. West, and Casey Luskin, *Intelligent Design Will Survive Kitzmiller v. Dover*, *Montana Law Review* 68, no. 1 (2007), 25 [PDF p. 19]; digital file, https://www.discovery.org/m/securepdfs/2021/03/Intelligent-Design-Will-Survive-Kitzmillerv.Dover-DeWolf-West-Luskin.pdf : accessed 12 November 2025.

[806] Casey Luskin, “Outlining Intelligent Design’s Positive Argument,” *Science and Culture Today*, April 27, 2022, https://scienceandculture.com/2022/04/outlining-intelligent-designs-positive-argument/ : accessed October 29, 2025.

[807] Casey Luskin, “More on How We Can Know Intelligent Design Is Science,” *Science and Culture Today*, November 28, 2012, https://scienceandculture.com/2012/11/more_on_how_we_/ : accessed October 29, 2025.

[808] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 272.

mechanisms and does not prematurely rule out either possibility."[809]

Lönnig & Meis: "We would not like to speak of the ID theory as an alternative to the naturalistic method of scientific knowledge acquisition, but rather as a complementary approach. . . .

". . . Testable naturalistic processes are in principle accepted by ID theorists."[810]

Galloway: "To be fair to the commonly accepted explanations in the natural sciences, we ought to establish whether natural laws or chance may satisfactorily answer the question of the origin of some complex physiological or biochemical system. If the answer is 'Yes' to either option, then we need go no further. If, on the other hand, the answer is 'No,' then the additional possibility of deliberate contrivance or design needs to be considered."[811]

Swift: "Scientists should . . . not make a teleological explanation an easy option, but, in the interests of good science, should search as hard as possible for a natural explanation (methodological naturalism). However, a good scientist also 152ecognizes that there are, or at least may be, limits to science, and we cannot safely assume that there are no other kinds of explanation. . . .

". . . Even if the concept of teleology or design does not sit comfortably with scientists, even if admitting the possibility of supernatural explanations does have some negative impact on scientific investigations, these are not valid reasons for assuming such concepts are false. Most scientists would, I think, claim they are searching after a true account of the universe. The fact that some aspect of what we uncover might not be as we would wish it, is not a valid reason for rejecting it.

". . . Some, for totally non-scientific reasons, want the world to be completely explicable in naturalistic terms; and are determined to maintain this view whatever the contrary evidence."[812]

Nelson: "If what we want is the truth about how the world and its creatures came to be, then we may not be able to tell that story in fully naturalistic terms. Because the truth – to modern eyes ungainly, even ugly – may be otherwise."[813]

Myers III: "ID proponents would certainly not be adherents of metaphysical naturalism, but they do accept methodological naturalism as an ostensibly normative principle for doing science, while believing it unnecessarily constrains science from entertaining empirical proof of intelligent agency.

"Despite what ID advocates may personally conclude about who the designer is, they still can work within methodological naturalism to explain scientific phenomena to the extent possible, since it is

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[809] Reinhard Junker, "Deutungen des Lebens unter der Voraussetzung von Schöpfung," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 332, sec. 16.6.2; subsection authored by Markus Widenmeyer. Quoted passage translated from German.

[810] Wolf-Ekkehard Lönnig and Frieder Meis, "Intelligent Design (ID) liefert wissenschaftliche Erklärungen: Methodologische Bemerkungen zu einem klaren Verhältnis (Erste Diskussionsrunde)," *Religion – Staat – Gesellschaft: Journal for the Study of Beliefs and Worldviews*, vol. 7, no. 2 (2006) (published 25 May 2007), https://www.weloennig.de/RSGID1.html : accessed 12 November 2025. Quoted passage translated from German.

[811] David J. Galloway, *Design Dissected: Is the Design Real? A Clinical Look at Life's Complexity, Design, and Ultimate Causation* (Kilmarnock, Scotland: John Ritchie Ltd, 2021), 198–199.

[812] David W. Swift, *Evolution Under the Microscope: A Scientific Critique of the Theory of Evolution* (Leighton, UK: Leighton Academic Press, 2002), 405, 406.

[813] Paul A. Nelson, "Jettison the Arguments, or the Rule?: The Place of Darwinian Theological Themata in Evolutionary Reasoning," *Access Research Network*, 1998, https://www.arn.org/docs/nelson/pn_jettison.htm : accessed 1 September 2025.

not a metaphysical position. But they fully part ways with metaphysical naturalism on the latter's insistence that the natural world can, all on its own, produce the full complexity and diversity that we see in the universe and in biological organisms."[814]

Dembski: "If methodological naturalism were merely a working hypothesis, maintained because it supposedly has served science well in the past, that would be one thing. . . . But methodological naturalism isn't saying that we have yet to encounter empirical evidence of design in nature but we should stay open to it in case it comes along. Rather, methodological naturalism insists that one is most logical, most scientific, if one pretends such an empirical possibility is logically impossible. Instead of holding methodological naturalism as a working hypothesis, methodological naturalists hold it as a dogma."[815]

Meyer: "Unfortunately, methodological naturalism is a demanding doctrine. The rule does not say 'try finding a materialistic cause but keep intelligent design in the mix of live possibilities, in light of what the evidence might show.' Rather, MN tells you that you simply must posit a material or physical cause, whatever the evidence. One cannot discover evidence of the activity of a designing mind or intelligence at work in the history of life because the design hypothesis has been excluded from consideration, even before considering the evidence."[816]

Johnson: "The key question raised by the qualifier *methodological* is this: What is being limited—science or reality? When 'methodological naturalism' is combined with a very strong a priori confidence that materialistic theories invoking only unintelligent causes can account for such phenomena as genetic information and human intelligence, the distinction between methodological and metaphysical naturalism tends to collapse."[817]

G. Kemper, H. Kemper, & Luskin: "Materialists presume that the only reality is the material world. Materialists then claim that anything beyond material causes is unscientific. Therefore, any evidence that seemingly points toward intelligent causes is being misinterpreted, because ID, by their definition, is labeled 'unscientific.' They then conclude that there is no evidence of design, and all rational explanations lie within the material realm.

"We're back where we started—not due to the evidence, but due to circular reasoning. . . .

". . . Critical thinking will help you see materialist philosophy for what it is: a set of highly questionable assumptions, not a compelling (or even reasonable) conclusion. . . .

"Critical thinkers need to determine whether a conclusion is justified."[818]

Nelson: "The charitable reading of the uncertainty about the scientific status of design suggests that it reflects philosophical confusion. Somewhere in the deeper logic of our current conception of

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[814] Walter Myers III, "In Refusing to Identify a 'Designer,' ID Proponents Aren't Being Coy," *Science and Culture Today*, April 4, 2017, https://scienceandculture.com/2017/04/in-refusing-to-identify-a-designer-id-proponents-arent-being-coy/ : accessed October 29, 2025.

[815] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 170–171.

[816] Stephen C. Meyer, "Denying the Signature: A Response to Bishop and O'Connor," in David Klinghoffer, ed., *Debating Darwin's Doubt: A Scientific Controversy that Can No Longer Be Denied* (Seattle: Discovery Institute Press, 2015), 310.

[817] Phillip E. Johnson, *Reason in the Balance: The Case Against Naturalism in Science, Law & Education* (Downers Grove, IL: InterVarsity Press, 1995), 212.

[818] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 31.

scientific explanation, we have made, or overlooked, a very serious blunder. . . .

". . . The philosophical confusion reading of the uncertainty about the scientific status of design suggests that if design is true, the 'avowedly secular' element of the modern world picture is mistaken – and whether design is true cannot be settled by appealing to the 'avowedly secular' element of the modern world picture, without begging the question."[819]

Eberlin: "Being open to the evidence of foresight leaves us open to consider both primary and secondary means. In each case under consideration we can simply follow the evidence rather than being constrained by a question-begging rule."[820]

"Unlike materialistic philosophy, an openness to the evidence for intelligent design broadens the horizons of science."[821]

Nelson: "It is possible that an intelligence created the world, just as it is possible that, to take the other (opposing) ancient hypothesis, the world contains its springs of order and design wholly within itself. Whatever philosophy of science we adopt should allow for both possibilities; methodological naturalism does not; therefore methodological naturalism is unsound."[822]

19.2.8 The "Gaps" Objection and the Scientific Rigor of Intelligent Design

Luskin: "There will, of course, always be gaps in scientific knowledge. But when critics accuse ID of being a 'gaps-based' argument, they essentially insist that all gaps may only be filled with naturalistic explanations, and promote 'materialism-of-the-gaps' thinking. This precludes scientists from fully seeking the truth and finding evidence for design in nature. ID rejects gaps-based reasoning of all kinds, and follows the motto that we should 'follow the evidence wherever it leads.'"[823]

Lönnig: "We should be on guard in both directions. In both directions we can hinder the progress of

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[819] Paul A. Nelson, "Jettison the Arguments, or the Rule?: The Place of Darwinian Theological Themata in Evolutionary Reasoning," *Access Research Network*, 1998, https://www.arn.org/docs/nelson/pn_jettison.htm : accessed 1 September 2025. Quotation from both main text and footnote 77.

[820] Marcos Eberlin, *Foresight: How the Chemistry of Life Reveals Planning and Purpose*, Kindle edition (Seattle: Discovery Institute Press, 2019), 143. Page number reflects the Kindle edition mapped to ISBN 1936599651 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "being open"; for print readers, the page number provides approximate placement.

[821] Marcos Eberlin, *Foresight: How the Chemistry of Life Reveals Planning and Purpose*, Kindle edition (Seattle: Discovery Institute Press, 2019), 145. Page number reflects the Kindle edition mapped to ISBN 1936599651 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "unlike materialistic"; for print readers, the page number provides approximate placement.

[822] Paul A. Nelson, "Jettison the Arguments, or the Rule?: The Place of Darwinian Theological Themata in Evolutionary Reasoning," *Access Research Network*, 1998, https://www.arn.org/docs/nelson/pn_jettison.htm : accessed 1 September 2025.

[823] Casey Luskin, "A Slightly Technical Introduction to Intelligent Design," *Intelligent Design*, 2016, https://intelligentdesign.org/articles/a-slightly-technical-introduction-to-intelligent-design/ accessed 14 November 2025.

knowledge."[824]

Behe: "The conclusion of design flows naturally from the data; we should not shrink from it; we should embrace it and build on it.

". . . It is important to realize that we are not inferring design from what we do not know, but from what we do know. We are not inferring design to account for a black box, but to account for an open box."[825]

Luskin: "Adding ID to our explanatory toolkit leads to many advances in different scientific fields. . . .

"ID has scientific merit because it uses well-accepted methods of historical sciences in order to detect in nature the types of complexity that we understand, from present-day observations, are derived from intelligent causes."[826]

Meyer: "We would not say, for example, that an archaeologist had committed a 'scribe-of-the-gaps' fallacy simply because he inferred that an intelligent agent had produced an ancient hieroglyphic inscription. Instead, we recognize that the archaeologist has made an inference based upon the *presence* of a feature (namely, high information content or small probability specification, to use Dembski's terminology) that implies an intelligent cause. We would not say that he had based his inference (solely) upon the *absence* of evidence for a suitably efficacious natural cause."[827]

Leisola: "Eventually I came to realize that this criticism cuts both ways, since a functional atheist also can reach for pat explanations in the face of mystery. It's just that for him, the pat explanation will never be God. That is, you do not need God in your explanatory toolkit in order to short-circuit careful scientific investigation and reasoning. I realized that I myself had been all too willing to stuff vague materialistic explanations into the gaps of our scientific knowledge."[828]

Lönnig: "All difficulties are dismissed as gaps in knowledge and these gaps in knowledge will continue to be filled in the future within the framework of Darwin's foundations. There is no other possibility for the dogmatic Darwinist."[829]

"Since we never (or perhaps very, very rarely) know everything about the absolutely exact range of certain factors and processes in the past, one can refute any (no matter how incorrect!) theory by

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[824] Wolf-Ekkehard Lönnig, quoted in Granville Sewell, "Intelligent Design, Ahead of Its Time: More on W. E. Lönnig's 1971 Thesis," *Science and Culture Today*, June 28, 2021, https://scienceandculture.com/2021/06/intelligent-design-ahead-of-its-time-more-on-w-e-lonnigs-1971-thesis/ : accessed October 29, 2025.

[825] Michael J. Behe, "Molecular Machines: Experimental Support for the Design Inference," *Discovery Institute*, 1 March 1998, https://www.discovery.org/a/54/ : accessed 29 October 2025.

[826] Casey Luskin, "A Slightly Technical Introduction to Intelligent Design," *Intelligent Design*, 2016, https://intelligentdesign.org/articles/a-slightly-technical-introduction-to-intelligent-design/ accessed 14 November 2025.

[827] Stephen C. Meyer, "Teleological Evolution: The Difference it Doesn't Make," 18 December 2003, https://stephencmeyer.org/2003/12/18/teleological-evolution/ accessed 14 November 2025.

[828] Matti Leisola and Jonathan Witt, Introduction to *Heretic: One Scientist's Journey from Darwin to Design* (Seattle: Discovery Institute Press, 2018), first page of introduction.

[829] Wolf-Ekkehard Lönnig, "Neodarwinismus und Transposons," in *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/AesV3.html : accessed 2 November 2025. Quoted passage translated from German.

pointing out that we don't know everything yet."[830]

"In the long run it is not particularly convincing if we regularly fill our knowledge gaps in evolutionary theses, only to drop them again proportionally with the increase in knowledge – there are numerous examples of this from all areas of biology."[831]

Lennox: "One might even say that it is easier to end up with an 'evolution of the gaps' than a 'God of the gaps' since the former suggestion is likely to attract far less criticism than the latter."[832]

Durston: "The multiverse, it seems, is modern science's 'god of the gaps': if it is too wildly improbable, if we have no natural explanation — especially if the circumstances appear to point to God — then the multiverse must have done it."[833]

McLatchie: "Much like 'god-of-the-gaps' arguments, the 'evolution-of-the-gaps' argument has to retreat with advances in scientific knowledge, as biologists uncover important reasons for the way these features have been designed. One example of this would be the once-thought-to-be-prevalent 'junk DNA' in our genomes, for which important function is constantly being identified."[834]

"A design inference is not triggered by any phenomenon that we cannot yet explain. Rather, it is triggered when two conditions are met. First, the event must be exceedingly improbable (so much so that it exhausts the available probabilistic resources). Second, it must conform to a meaningful or independently given pattern."[835]

Meyer: "Both theists and secularists may worry: 'if design is allowed as a (historically) scientific theory, could it not be invoked at every turn as a theoretical panacea, stultifying inquiry as it goes? Might not design become a refuge for the intellectually lazy who have refused to study what nature actually does?' . . .

"When scientists address questions of what nature normally does or how one part of nature generally affects another, any reference to the particular action of agents becomes inappropriate because it fails to address the question motivating the inquiry. . . .

". . . Classical examples of inappropriate postulations of divine activity (that is, God-of-the-gaps arguments) occur almost exclusively in the inductive or nomological sciences, as Newton's ill-fated use

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[830] Wolf-Ekkehard Lönnig, correspondence to Prof. U (pseudonym), 7 August 2001, published in *Ein paar offene Fragen der Evolutionstheorie sowie theologische Einwände von Evolutionstheoretikern zum Thema Intelligent Design*, https://www.weloennig.de/OffeneFragenEvol.html : accessed 17 November 2025. Quoted passage translated from German.

[831] Wolf-Ekkehard Lönnig, "Addendum, Artbegriff S. 558–565 (Gen-Duplikationen und Introns)," in "Evolution durch Gen-Duplikationen?," *Artbegriff, Evolution und Schöpfung: Dokumentation und Diskussion der verschiedenen Auffassungen*, online ed., https://www.weloennig.de/Genduplikationen.html : accessed 2 November 2025. Quoted passage translated from German.

[832] John C. Lennox, *God's Undertaker: Has Science Buried God?* (Oxford: Lion Books, 2009), 157–158.

[833] Kirk Durston, "On Fantasy in Modern Science," *Science and Culture Today*, April 25, 2019, https://scienceandculture.com/2019/04/on-fantasy-in-modern-science/ : accessed October 29, 2025.

[834] Jonathan McLatchie, "Why the Argument from Suboptimal Design Is Weak," *Science and Culture Today*, December 20, 2012, https://scienceandculture.com/2012/12/why_the_argumen_1/ : accessed October 29, 2025.

[835] Jonathan McLatchie, "Once Again, Why Intelligent Design Is Not a 'God-of-the-Gaps' Argument," *Science and Culture Today*, January 9, 2013, https://scienceandculture.com/2013/01/why_intelligent/ : accessed October 29, 2025.

of agency to provide a more accurate description of planetary motion suggests." [836]

Hartwig & Meyer: "In the inductive sciences, the whole point is to discover how the natural world normally operates on [its] own, i.e, *in the absence of intelligent intervention.* Postulating an intelligent agent would thus contradict the implicit goal of research in the inductive sciences."[837]

Meyer: "It [does not] follow, however, that references to agency are necessarily inappropriate when reconstructing a causal history—when attempting to answer questions about how a particular feature in the natural world (or the universe itself) arose. . . .

". . . Historical explanations require the postulation of antecedent causal events; they do not seek to infer laws. To offer past agency as part of an origins scenario or explanation is, therefore, contextually appropriate because the type of theoretical entity provided corresponds to the type required by historical explanations. Simply put, past agency is a causal event. Agency, therefore, whether seen or unseen, may serve as a contextually appropriate theoretical entity in a historical explanation, even if it could not do so in a nomological or inductive theory. Mental action may be a causal event, even if it is not a law."[838]

Dembski: "It is this worry of falsely attributing something to design . . . only to have it overturned that has prevented design from entering science proper.

"This worry, though perhaps justified in the past, is no longer tenable. There does in fact exist a rigorous criterion for distinguishing intelligently caused objects from unintelligently caused ones. Many special sciences already use this criterion, though in a pre-theoretic form (e.g. forensic science, artificial intelligence, cryptography, archeology, and the Search for Extra-Terrestrial Intelligence). The great breakthrough of the intelligent design movement has been to isolate and make precise this criterion."[839]

"Whenever we infer design, we must establish two things – *complexity and specification*. Complexity ensures that the object in question is not so simple that it can readily be explained by chance. Specification ensures that this object exhibits the type of pattern that is the trademark of intelligence."[840]

"For the complexity-specification criterion to be satisfied, the complexity of the event or object in question must correspond to a probability which, when recomputed against the relevant probabilistic

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[836] Stephen C. Meyer, "The Scientific Status of Intelligent Design: The Methodological Equivalence of Naturalistic and Non-Naturalistic Origins Theories," 13 November 2005, https://stephencmeyer.org/2005/11/13/the-scientific-status-of-intelligent-design/ accessed 14 November 2025.

[837] Mark D. Hartwig and Stephen C. Meyer, "A Note to Teachers," in Percival Davis and Dean H. Kenyon, *Of Pandas and People: The Central Question of Biological Origins*, 2nd ed. (Dallas: Haughton Publishing Co., 1993), 159.

[838] Stephen C. Meyer, "The Scientific Status of Intelligent Design: The Methodological Equivalence of Naturalistic and Non-Naturalistic Origins Theories," 13 November 2005, https://stephencmeyer.org/2005/11/13/the-scientific-status-of-intelligent-design/ : accessed 14 November 2025.

[839] William Dembski, "Naturalism and design," in William Lane Craig and J. P. Moreland, eds., *Naturalism: A Critical Analysis* (London and New York: Routledge, 2000), 257.

[840] William Dembski, "Naturalism and design," in William Lane Craig and J. P. Moreland, eds., *Naturalism: A Critical Analysis* (London and New York: Routledge, 2000), 259.

resources, is less than ½."[841]

Luskin: "The relevant specification in biology is functionality. Folks on both sides of the evolution debate marvel at how biological features are tightly specified to match what is required for functionality. This is not controversial."[842]

Ewert & Dembski: "Science is an inherently fallible enterprise. If we make faulty assumptions, we may draw faulty conclusions. Notwithstanding, the mere possibility of getting things wrong should never stop us from doing the best we can with what we do know—and reasoning accordingly from there. . . .

"The risk of further knowledge upsetting a design inference is a feature and not a bug of scientific inquiry in general."[843]

Meis & Lönnig: "ID is . . . an extensive *scientific research programme* . . . , in which the assumption of the intelligent origin of biotic objects is first thoroughly examined and is, in principle, also falsifiable in the course of further research."[844]

"It has enabled significant discoveries. . . . Modern biology is being expanded by a *dimension of insight*. Even unobjective-aggressive campaigns against the theory will not change that in the long run. Much has been asserted through the ID theory, and successful research has long been conducted on its basis."[845]

Cothran: "The primary reason opponents say that ID is not science is because it doesn't make falsifiable claims. But if it doesn't make falsifiable claims, then it can't be said to have made claims that have been found false. Yet this is exactly what they charge.

"Opponents of ID have done logical contortions of extraordinary dexterity to get out of this dilemma, but they only seem to land themselves in further contradiction."[846]

Wells: "There can be no doubt that ID and Darwinism are looking at the same evidence and giving different answers to the same questions. Darwinists attempt to insulate their answers from criticism by declaring ID unscientific, but their attempt collapses into a contradiction: ID isn't science because

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[841] William Dembski, "Naturalism and design," in William Lane Craig and J. P. Moreland, eds., *Naturalism: A Critical Analysis* (London and New York: Routledge, 2000), 270.
[842] Casey Luskin, "Can We Scientifically Determine if a Complex Event Is Specified?" *Science and Culture Today*, July 18, 2012, https://scienceandculture.com/2012/07/can_we_scientif/ : accessed October 29, 2025.
[843] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 248.
[844] Wolf-Ekkehard Lönnig and Frieder Meis, "Intelligent Design (ID) liefert wissenschaftliche Erklärungen: Methodologische Bemerkungen zu einem klaren Verhältnis (Erste Diskussionsrunde)," *Religion – Staat – Gesellschaft: Journal for the Study of Beliefs and Worldviews*, vol. 7, no. 2 (2006) (published 25 May 2007), https://www.weloennig.de/RSGID1.html : accessed 12 November 2025. Quoted passage translated from German.
[845] Wolf-Ekkehard Lönnig and Frieder Meis, "Intelligent Design als integraler Bestandteil der modernen Biologie (Dritte Diskussionsrunde)," *Religion – Staat – Gesellschaft: Journal for the Study of Beliefs and Worldviews*, vol. 7, no. 2 (2006) (published 25 May 2007), https://www.weloennig.de/RSGID3.html : accessed 12 November 2025. Quoted passage translated from German.
[846] Martin Cothran, "Two Years after Dover Intelligent Design Trial Darwinists, Like Judge Jones, Still Want to Have It Both Ways," *Science and Culture Today*, 20 December 2007, https://scienceandculture.com/2007/12/the_logical_bankruptcy_of_the/ : accessed 29 October 2025.

it isn't testable, and, besides, it has been tested and proven false."[847]

Lönnig: "For the intelligent-design-theory . . . , not only have potential falsification criteria been presented . . . , but it also offers numerous further positive research possibilities . . . . Furthermore, the ID-theory is in full agreement with the known biological facts – from genetics . . . to paleontology . . . and makes numerous biological *predictions* on questions which the synthetic evolutionary theory in principle cannot answer."[848]

Widenmeyer: "Design arguments can be strengthened by research; however, further research can also weaken them. . . . The design approach stimulates research whose results either support or undermine it."[849]

Lönnig: "The fact is . . . that to date the research results have confirmed the theory in many essential issues (so that the theory has already shown its scientific value)."[850]

Wells & Dembski: "[Science] takes risks and can afford to take risks because it is always in contact with empirical evidence and therefore can correct itself in light of new facts. . . . All scientific hypotheses place themselves in empirical harm's way and may be shown wrong."[851]

Luskin: "Rather than absolute proof, scientific theories deal in evidence—you can have powerful empirical evidence supporting a testable scientific claim, but science never 'proves' anything the way we might 'prove' a mathematical theorem."[852]

Dembski: "Although [the complexity-specification criterion] cannot achieve logical demonstration, it does achieve statistical justification so compelling as to demand assent."[853]

"Design is, via the complexity-specification criterion, fully amenable to scientific investigation. Naturalism is therefore seen to be false on strictly scientific grounds. The logic of this conclusion is straightforward: naturalism allows only certain sorts of fundamental causes (chance and necessity). Those causes are (demonstrably) incapable of generating specified complexity. But nature exhibits

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[847] Jonathan Wells, *The Politically Incorrect Guide to Darwinism and Intelligent Design* (Washington, DC: Regnery Publishing, 2006), 140.

[848] Wolf-Ekkehard Lönnig, *The Evolution of the Long-Necked Giraffe (Giraffa camelopardalis L.): What Do We Really Know? Testing the Theories of Gradualism, Macromutation, and Intelligent Design* (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2011), 86 [PDF p. 98]; digital file, https://ad-multimedia.de/evo/long-necked-giraffe_mU.pdf : accessed 4 November 2025.

[849] Reinhard Junker, "Deutungen des Lebens unter der Voraussetzung von Schöpfung," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 343, sec. 16.6.7; subsection authored by Markus Widenmeyer. Quoted passage translated from German.

[850] Wolf-Ekkehard Lönnig, *The Evolution of the Long-Necked Giraffe (Giraffa camelopardalis L.): What Do We Really Know? Testing the Theories of Gradualism, Macromutation, and Intelligent Design* (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2011), 66 [PDF p. 78]; digital file, https://ad-multimedia.de/evo/long-necked-giraffe_mU.pdf : accessed 4 November 2025.

[851] William A. Dembski and Jonathan Wells, *How to Be an Intellectually Fulfilled Atheist (Or Not)*, 3rd ed. (Dallas, TX: Foundation for Thought and Ethics, 2015), 126.

[852] Casey Luskin, "Answering Another Objection to Intelligent Design: 'You Can't Prove God Exists,'" *Science and Culture Today*, February 22, 2021, https://scienceandculture.com/2021/02/answering-another-objection-to-intelligent-design-you-cant-prove-god-exists/ : accessed October 29, 2025.

[853] William Dembski, "Naturalism and design," in William Lane Craig and J. P. Moreland, eds., *Naturalism: A Critical Analysis* (London and New York: Routledge, 2000), 275.

specified complexity, especially in biology. Therefore naturalism is false."[854]

Hedin: "The philosophical outlook known as scientism blossomed when science successfully explained many new phenomena by natural laws. It has been running on dwindling momentum, however. Evidence has been mounting that nature is insufficient to explain its own origin, the origin of life, and the origin of all the complexities of living organisms since the appearance of the first single-celled organism billions of years ago. A serious rethink is long overdue."[855]

Leisola: "The myth [of an ever-shrinking god of the gaps] ignores major developments in origin-of-life studies, physics, and astronomy. It ignores the reality that in significant areas, the evidence for intelligent design is not shrinking, but growing."[856]

Behe: "As science advances relentlessly, the molecular foundation of life is not getting any less complex than it seemed a decade ago; it is getting exponentially more complex. As it does, the case for the intelligent design of life becomes exponentially stronger."[857]

"The conclusion of intelligent design is strengthened by each new example of elegant, complex molecular machinery or system that science discovers at the foundation of life."[858]

Dembski: "There's no unprejudiced reason to think that as our knowledge of natural processes relevant to the formation of biotic systems increases, the improbabilities or complexities associated with such systems will diminish and specified complexity will thereby get refuted or dwindle away. (And since specified complexity is a marker of intelligent design, the detectability of design would thereby also get refuted or dwindle away.)"[859]

Swift: "The popular perception is that increased scientific knowledge inevitably closes the gaps in our understanding, and progressively removes any need for non-natural explanations. However, biology is a clear example – perhaps it is the only example – where our increased knowledge has served to widen the gap rather than close it."[860]

Lönnig: "The materialistic-reductionist method itself . . . severely limits the possibilities of cognition. . . . [I wonder] whether *apparent* ignorance – from a new epistemological approach – could actually be

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[854] William Dembski, "Naturalism and design," in William Lane Craig and J. P. Moreland, eds., *Naturalism: A Critical Analysis* (London and New York: Routledge, 2000), 277.
[855] Eric Hedin, *Canceled Science: What Some Atheists Don't Want You to See*, Kindle edition (Seattle: Discovery Institute Press, 2021), 192. Page number reflects the Kindle edition mapped to ISBN 1637120001 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "scientism blossomed"; for print readers, the page number provides approximate placement.
[856] Matti Leisola and Jonathan Witt, *Heretic: One Scientist's Journey from Darwin to Design* (Seattle: Discovery Institute Press, 2018), 229.
[857] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 256.
[858] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 271.
[859] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 209.
[860] David W. Swift, *Evolution Under the Microscope: A Scientific Critique of the Theory of Evolution* (Leighton, UK: Leighton Academic Press, 2002), 408.

transformed into real 'knowledge'."[861]

Meyer: "*Perceived gaps* in our knowledge of the materialistic processes responsible for key events in natural history are based on our background assumptions about *the kind of processes or entities that ought to have been working in nature*. . . .

". . . If life did *not* evolve via a strictly materialistic process but was, for example, intelligently designed, then our absence of knowledge of a materialistic process does not represent 'a gap' in knowledge of an actual process. It only represents a gap in materialistic accounts of the origin of life. In that case, the perceived gap in our knowledge would merely reflect a false assumption about what *must have* happened or about the existence of a certain kind of process—a completely materialistic one—with the creative power to generate life."[862]

Dembski & Ewert: "Critics of intelligent design often mistakenly charge the design inference with being an argument from ignorance. . . . In fact, a design inference, by ruling out relevant chance hypotheses, engages in an eliminative induction, whose logic is sound and differs from an argument from ignorance. Eliminative induction is a method of reasoning used in science and philosophy to support a hypothesis by systematically eliminating competing hypotheses. The principle underlying eliminative induction is that if all alternative hypotheses can be falsified or shown to be less likely, then the remaining hypothesis . . . gains credibility and support."[863]

Meyer: "In addition to a premise about how material causes lack demonstrated causal adequacy, the argument for intelligent design as the best explanation also affirms the demonstrated causal adequacy of an alternative cause, namely, intelligence."[864]

Dembski: "Let's even give this premise a name: *the can-do premise* (because we know that designers 'can do' it, that is, they can generate specified complexity.)"[865]

Meis: "It would be absurd to claim that anyone who traces the pyramids in Egypt to an intelligent cause would do so solely because he is incapable of giving an explanation based purely on natural laws. The intelligent design theory does not need the failure of the theory of evolution to pass. . . . The intelligent design theory is the first choice, simply because it works and not just because the theory of evolution cannot work at all."[866]

Flannery: "Himmelfarb accuses Darwin of making an argument from ignorance: 'As possibilities were promoted into probabilities, and probabilities into certainties, so ignorance itself was raised to a position only once removed from certain knowledge. When imagination exhausted itself and Darwin

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[861] Wolf-Ekkehard Lönnig, correspondence to Prof. U (pseudonym), 27 December 2001, published in *Ein paar offene Fragen der Evolutionstheorie sowie theologische Einwände von Evolutionstheoretikern zum Thema Intelligent Design*, https://www.weloennig.de/OffeneFragenEvol.html : accessed 17 November 2025. Quoted passage translated from German.

[862] Stephen C. Meyer, *Return of the God Hypothesis: Three Scientific Discoveries That Reveal the Mind Behind the Universe* (New York: HarperOne, 2021), 424–425.

[863] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 337.

[864] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 379.

[865] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 221.

[866] Karl Friederich Meis, "Kritikpunkt 6," *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, https://www.intelligentdesigner.de/kritikpunkt-6/ : accessed 29 August 2025. Quoted passage translated from German.

could devise no hypothesis to explain away the difficulty, he resorted to the blanket assurance that we were too ignorant of the ways of nature to know why one event occurred rather than another, and hence ignorant of the explanation that would reconcile the facts to his theory.'"[867]

[867] Michael Flannery, "Himmelfarb and Her Haters," *Science and Culture Today*, January 3, 2020, https://scienceandculture.com/2020/01/himmelfarb-and-her-haters/ : accessed October 29, 2025.

Section 20

20.1 Authors of *Reason in the Balance*

Bailin & Battersby: "Spiritual explanations lack the kind of fruitfulness we find in Darwin's approach. They do not yield new insights or predictions about other phenomena. Once we postulate the intelligent designer as an explanation, nothing else follows from it that enables us to make predictions or have insight into other aspects of the world. Naturalistic theories, in contrast, are fruitful, having models that lead to new explanations and predictions."[868]

20.2 Extended Dialogue

20.2.1 Scientific Predictions and the Case of Junk DNA

Hunter: "Successful predictions, even if very impressive, do not prove theories to be true. In fact successful predictions can come from theories that are known to be false. Using successful predictions to evaluate the veracity of a theory requires a good deal of care."[869]

Meyer: "Theories in the historical sciences typically make claims about what happened in the past, or what happened in the past to cause particular events to occur. . . . For this reason, historical scientific theories are rarely tested by making predictions about what will occur under controlled laboratory conditions. . . . Instead, such theories are usually tested by comparing their explanatory power against that of their competitors with respect to already known facts. Even in the case in which historical theories make claims about past causes they usually do so on the basis of pre-existing knowledge of cause and effect relationships. Nevertheless, prediction may play a limited role in testing historical scientific theories since such theories may have implications as to what kind of evidence is likely to emerge in the future."[870]

Miller: "The design perspective has allowed its adherents to anticipate or become early adopters of numerous discoveries:

- The majority of the human genome once considered inactive was eventually shown to be functional.
- Numerous examples of 'junk DNA' were eventually shown to have function.
- Extraordinary compression of information was discovered in DNA such as with overlapping genes.
- The consistent pattern was eventually recognized of sudden appearances of complex adaptations in the fossil record.
- Evolutionary trees could not be constructed without laying aside large amounts of data where

[868] Sharon Bailin and Mark Battersby, *Reason in the Balance: An Inquiry Approach to Critical Thinking*, 2nd ed. (Indianapolis: Hackett Publishing Company, 2016), 315.
[869] Cornelius G. Hunter, *Science's Blind Spot: The Unseen Religion of Scientific Naturalism* (Grand Rapids, MI: Brazos Press, 2007), 74.
[870] Stephen C. Meyer, "The Origin of Biological Information and the Higher Taxonomic Categories," *Proceedings of the Biological Society of Washington* 117, no. 2 (2004), 232n10.

similarities existed between species that were not closely related. In other words, the iconic Tree of Life cannot be consistently reconstructed.

- An abundance of genes were discovered that only appear in single genera or species (orphans). Design advocates predicted this development decades before their colleagues did.
- Design features once assumed to be poorly engineered were later shown to play essential roles. Examples include the backwards wiring of the vertebrate eye, the panda's thumb, and so-called vestigial organs such as the human appendix.
- Insights and patterns from engineering were increasingly recognized as essential for understanding biological systems.
- Hereditary information was discovered to exist outside of DNA."[871]

Meyer: "Neo-Darwinism affirms that new functional sections of the genome arise by trial and error process of mutation and subsequent selection. For this reason, historically many neo-Darwinists expected or predicted that the large non-coding regions of the genome—so-called 'junk DNA—would lack function altogether. . . . On this line of thinking, the non-functional sections of the genome represent nature's failed experiments that remain in the genome as a kind of artifact of the past activity of the mutation and selection process."[872]

Luskin: "In a weighty academic book . . . , *RNA: The Epicenter of Genetic Information* . . . , Mattick along with bioengineer Paulo Amaral argue that 'the genomes of humans and other complex organisms are not full of junk.' They acknowledge that this is 'contrary to long-held … dogmas of evolutionary theory.'"[873]

"Mattick and Amaral are evolutionists, but this is a huge admission of a failed prediction coming out of the standard evolutionary paradigm."[874]

"It's clear that the consensus of molecular biologists — people who actually study how the genome works — now believe that the idea of 'junk DNA' is essentially wrong."[875]

Wells: "ID proponents do ***not*** assume that all non-coding DNA must be functional. They infer that it is unlikely that most of our DNA would be nonfunctional; therefore, scientists should continue looking for functions."[876]

Lönnig: "According to the ENCODE Project: '80% of the genome shows biochemical indices of function.' Design theory can live well with 80% . . . , but some ENCODE researchers are moving towards

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[871] Brian Miller, "Intelligent Design and the Advancement of Science," *Science and Culture Today*, December 11, 2017, https://scienceandculture.com/2017/12/intelligent-design-and-the-advancement-of-science/ : accessed October 29, 2025.
[872] Stephen C. Meyer, "The Origin of Biological Information and the Higher Taxonomic Categories," *Proceedings of the Biological Society of Washington* 117, no. 2 (2004), 232n10.
[873] Casey Luskin, "The New Post-Junk-DNA Paradigm of Molecular Biology: RNA Genes," *Science and Culture Today*, 28 November 2023, https://scienceandculture.com/2023/11/the-new-post-junk-dna-paradigm-of-molecular-biology-rna-genes/ : accessed 29 October 2025.
[874] Casey Luskin, "New *Long Story Short* Video Tackles 'A Battle of Predictions: Junk DNA,'" *Science and Culture Today*, 28 March 2024, https://scienceandculture.com/2024/03/new-long-story-video-tackles-a-battle-of-predictions-junk-dna/ : accessed 29 October 2025.
[875] Casey Luskin, "What a Darwin Advocate's Response to the ENCODE Project Tells Us about the Darwin Debate," *Science and Culture Today*, September 10, 2012, https://scienceandculture.com/2012/09/what_an_evoluti_1/ : accessed October 29, 2025.
[876] Jonathan Wells, *The Myth of Junk DNA* (Seattle: Discovery Institute Press, 2011), 86.

100%."[877]

Wells: "One of the surest ways to discourage empirical research into the possible functions of a feature is to decide at the outset that it has none."[878]

"Assuming that any feature of an organism has no function discourages further investigation. In this respect, the myth of junk DNA has been a science-stopper."[879]

Joshua: When it was recently discovered that there is about a 15 percent genetic difference between humans and chimps, some evolutionists used junk DNA to downplay the new discovery.

Luskin: "An evolutionary icon — the famous '1 percent difference' between the human and chimp genomes, touted across the breadth of popular and other scientific writing and teaching — has fallen."[880]

"Evolution defenders generally accept the new evidence showing that humans and chimps are 15 percent genetically different. So as strategy, they downplay the new number, claiming that most of these great genomic differences are junk and don't mean anything, focusing instead on the 1.6 percent single nucleotide variation differences. Or, they change the topic to human-human genetic variation, and try to distract us from the toppling of this icon."[881]

"A significant portion of [the 14.9 percent difference represents] repetitive DNA, but we have strong reasons to believe that this repetitive DNA performs important functions."[882]

"The argument that critics are making is not just an argument from ignorance. It's an argument that goes against what biology has discovered, because *we know that differences in repeat copies can have functional importance*."[883]

Wells: "Junk DNA advocates have to retreat every time a new function is found. In effect, they are relying on an argument from ignorance—a sort of 'Darwin of the Gaps'—that becomes less tenable

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[877] Wolf-Ekkehard Lönnig, *Unser Haushund: Eine Spitzmaus im Wolfspelz? Oder beweisen die Hunderassen, dass der Mensch von Bakterien abstammt?* (self-published, 13 July 2012; last update 11 May 2014), 395n831; digital file, https://www.weloennig.de/Hunderassen.Bilder.Word97.pdf : accessed 4 November 2025. Quoted passage translated from German.

[878] Jonathan Wells, *Zombie Science: More Icons of Evolution*, Kindle edition (Seattle: Discovery Institute Press, 2017), 130. Page number reflects the Kindle edition mapped to ISBN 1936599449 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "surest"; for print readers, the page provides approximate placement.

[879] Jonathan Wells, *The Myth of Junk DNA* (Seattle: Discovery Institute Press, 2011), 107.

[880] Casey Luskin, "Fact Check: New 'Complete' Chimp Genome Shows 14.9 Percent Difference from Human Genome," *Science and Culture Today*, 21 May 2025, https://scienceandculture.com/2025/05/fact-check-new-complete-chimp-genome-shows-14-9-percent-difference-from-human-genome/ : accessed 29 October 2025.

[881] Casey Luskin, "On Human-Chimp Genetic Differences, the Critics Misstate My Arguments," *Science and Culture Today*, June 30, 2025, https://scienceandculture.com/2025/06/on-human-chimp-genetic-differences-the-critics-misstate-my-arguments : accessed 13 January 2026.

[882] Casey Luskin, "Additional Method of Analysis Confirms Human-Chimp Genomes Are About 15 Percent Different," *Science and Culture Today*, 27 May 2025, https://scienceandculture.com/2025/05/additional-method-of-analysis-confirms-human-chimp-genomes-are-about-15-percent-different/ : accessed 29 October 2025.

[883] Casey Luskin, "Critics Dismiss Genetic Differences Between Humans and Chimps as 'Meaningless' Junk," *Science and Culture Today*, 23 June 2025, https://scienceandculture.com/2025/06/critics-dismiss-genetic-differences-between-humans-and-chimps-as-meaningless-junk/ : accessed 29 October 2025.

with each new scientific discovery."[884]

Luskin: "Sometimes after explaining how the now-defunct junk-DNA mindset was encouraged and fostered by neo-Darwinian evolution, evolutionists respond by asserting that nonetheless some individuals from their camp explored function for junk-DNA. This, they claim, absolves their neo-Darwinian camp from any charges of science-stopping, and shows that the neo-Darwinian paradigm did not hinder research into junk-DNA. . . .

"**The largely refuted junk-DNA mindset was born and bred out of the neo-Darwinian paradigm, and if some rogue Darwinian (and non-Darwinian) biologists had the courage to study function for junk-DNA that's great, but it was not because of the neo-Darwinian paradigm but rather *in spite of it*.**"[885]

Batzer: "Where [the Darwinian apologists] used to *predict* rubbish in the genome, they now *predict* a stripped down, highly functional, take-no-prisoners genome where natural selection is daily scrutinizing and excising the unneeded components.

"This is called 'Data Peeking,' and it is also called 'Bad Faith.'"[886]

Remine: "It is all too convenient for evolutionists to loosely adapt to the data after the fact."[887]

Luskin: "But it isn't even clear that Darwinists have a good scientific justification to believe that junk-DNA, if it exists, would be naturally selected out of the genome. According to the 2006 edition of Voet and Voet's *Biochemistry*, there is insufficient selection pressure on functionless repetitive 'junk'-DNA to remove it from the genome."[888]

Dembski: "I . . . predicted in 1998 that function would be discovered for what was being called junk DNA."[889]

Luskin: "In 1994, ID-proponent Forrest Mims predicted that non-coding 'junk' DNA would have function, writing a letter to *Science*, 'Those supposedly meaningless strands of filler DNA that molecular biologists refer to as "junk" don't necessarily appear so useless to those of us who have designed and written code for digital controllers.'"[890]

"It seems beyond dispute that the Neo-Darwinian paradigm led to a false presumption that non-coding DNA lacks function, and that this presumption has resulted in real-world negative consequences for molecular biology and even for medicine. Moreover, it can no longer seriously be maintained that intelligent design is a science stopper: under an intelligent design approach to investigating non-

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[884] Jonathan Wells, *The Myth of Junk DNA* (Seattle: Discovery Institute Press, 2011), 104.
[885] Casey Luskin, "Junk DNA RoundUp (and Rebuttal): How Neo-Darwinism Creates Junk-Hypotheses, Then Resists Their Demise," *Science and Culture Today*, June 5, 2009, https://scienceandculture.com/2009/06/junk_dna_roundup_and_rebuttal/ : accessed October 29, 2025.
[886] Stephen A. Batzer, "Data Peeking, an Indispensible Implement in the Darwinian Toolbox," *Science and Culture Today*, November 19, 2012, https://scienceandculture.com/2012/11/data_peeking_an/ : accessed October 29, 2025.
[887] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 345.
[888] Casey Luskin, "A Response to Dr. Dawkins' 'The Information Challenge' (Part 3): The 'Junk'-DNA Blunder," *Science and Culture Today*, October 4, 2007, https://scienceandculture.com/2007/10/a_response_to_dr_dawkins_the_i/ : accessed 26 August 2025.
[889] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 363.
[890] Casey Luskin, "Junk DNA and Science-Stopping," *Science and Culture Today*, December 1, 2006, https://scienceandculture.com/2006/12/junk_dna_and_sciencestopping/ : accessed October 29, 2025.

coding DNA, the false presumptions of Neo-Darwinism might have been avoided."[891]

20.2.2 Scientific Heuristics and the Fruitfulness of Intelligent Design

G. Kemper, H. Kemper, & Luskin: "The commitment to 'junk DNA' and similar thinking has hindered the progress of science, discouraging researchers from discovering functions for non-coding DNA and alleged vestigial organs.[892]

Lönnig: "In retrospect one may speak of the history of such assumed vestigial structures as the 'rudimentary organs of the gaps', the gaps in the scientific knowledge of their usually subsequently discovered crucial anatomical, physiological, genetical and often also further biological functions."[893]

G. Kemper, H. Kemper, & Luskin: "With its commitment to the idea of vestigial organs, materialism did not just hold back scientific progress; it harmed patients. . . . Evolutionary thinking led doctors to unwittingly remove important organs.

". . . An intelligent design paradigm encourages scientists to seek function for poorly understood biological structures. Guided by such predictions, medicine and biology might have progressed much more rapidly."[894]

Coppedge: "Had scientists been focused on *design* and *function* back in the 1970s, who knows how much further along we would be?"[895]

Luskin: "To actually create drug cocktails or treatment strategies that can outsmart evolving bacteria, viruses, or cancer cells, biomedical researchers adopt strategies that *bank on the fact that there are limits to how much change can occur by Darwinian processes–so we actually make medical progress towards fighting diseases by questioning the power of the Darwinian mechanism!*"[896]

Wells: "American physician Robert Gatenby and his colleagues argue that an 'evolution-guided treatment strategy' can be effective in treating some cancers. . . .

"Perhaps adaptive therapy can help some cancer patients; let's hope so. But is it really based on

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[891] Casey Luskin, "Intelligent Design and the Death of the 'Junk-DNA' Neo-Darwinian Paradigm," *Science and Culture Today*, June 15, 2007, https://scienceandculture.com/2007/06/wired_magazine_unashamedly_mix/ : accessed October 29, 2025.
[892] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 139.
[893] Wolf-Ekkehard Lönnig, *The Evolution of Man: What Do We Really Know? Testing the Theories of Gradualism, Saltationism and Intelligent Design*, (self-published, 18/19 July and 21 August 2019; with supplement, 9 and 19 September 2019), 7; digital file, https://www.weloennig.de/HumanEvolution.pdf : accessed 9 November 2025.
[894] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 139.
[895] David Coppedge, "In 'Junk DNA,' Here Are Benefits of Seeking Function," *Science and Culture Today*, February 28, 2023, https://scienceandculture.com/2023/02/in-junk-dna-here-are-benefits-of-seeking-function/ : accessed October 29, 2025.
[896] Casey Luskin, "Intelligent Design's Utility Is Highlighted in a New Volume, *Engineering and the Ultimate*," *Science and Culture Today*, April 21, 2014, https://scienceandculture.com/2014/04/intelligent_des_16/ : accessed October 29, 2025.

evolutionary thinking? Microevolutionary thinking, but not macroevolutionary thinking."[897]

Luskin: "Professor Gunasekera has been a supporter of intelligent design for many years. Grounded in his ID-based views of what he has observed in nature, he has often wondered if organisms that are distant from humans on the 'tree of life' might be designed to help us to fight disease. Thus, he has researched whether certain plant molecules, even at nano levels, can have therapeutic benefits towards treating cancer and other diseases. . . .

". . . Though most non-ID researchers would surely recognize the benefits of using plants to treat disease, we might ask the question: *Without intelligent design, why should organisms FAR from humans on the 'tree of life' contain biomolecules with powerful therapeutic effects for treating human disease?* It's hard to imagine why molecules from a species as far removed from humans as plants should be useful in treating cancer in our human bodies. But under a design paradigm — where we might suppose that different organisms were designed to benefit us — it makes complete sense. It seems like the biosphere is designed to give us useful substances to help our survival."[898]

Lönnig: "Time and again the theory of intelligent design has been proven to be scientifically much more fertile than neo-Darwinism because it first looks carefully for biological functions thus avoiding a premature rush to the conclusion to any unproven biological non-functionalities – as the latter has often been practiced by many evolutionists."[899]

Rammerstorfer: "Growing knowledge and understanding regarding the structure and function of organisms has always been the enemy of arguments based on 'design flaws.'"[900]

Junker: "The argument of non-functionality is problematic, since non-functionality is hardly empirically demonstrable. The natural scientist can only determine that functions in some cases have *not yet been found*, but not that they do not exist at all. At most, he can *presume* that an examined organ has no function."[901]

Nelson: "What's the worst possible heuristic for making biological discoveries? 'We don't know what this structure does, so it probably does nothing. Remember, evolution produces a lot of non-functional debris.'"[902]

Luskin: "Darwinian evolution – whatever its other virtues – does not provide a fruitful heuristic in

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[897] Jonathan Wells, *Zombie Science: More Icons of Evolution*, Kindle edition (Seattle: Discovery Institute Press, 2017), 167. Page number reflects the Kindle edition mapped to ISBN 1936599449 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "American physician"; for print readers, the page provides approximate placement.

[898] Casey Luskin, "Discovery Institute–Funded Paper in *Scientific Reports* Applies an ID-Inspired Approach to Cancer," *Science and Culture Today*, 16 October 2025, https://scienceandculture.com/2025/10/discovery-institute-funded-paper-in-scientific-reports-applies-an-id-inspired-approach-to-cancer/ : accessed 29 October 2025.

[899] Wolf-Ekkehard Lönnig, *The Panda's Thumb: Striking Imperfection or Masterpiece of Engineering? PART 1 and PART 2 in One Document* (self-published, 31 March to 13 June 2024; correction and additions, 11 May 2025, pp. 58–60), 43; digital file, https://www.weloennig.de/PANDA.Part1.pdf : accessed 6 November 2025.

[900] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 69. Quoted passage translated from German.

[901] Reinhard Junker, "Ähnlichkeiten," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 201. Quoted passage translated from German.

[902] Paul Nelson, "The Best and Worst Heuristics for Biological Discovery," *Science and Culture Today*, November 3, 2023, https://scienceandculture.com/2023/11/the-best-and-worst-heuristics-for-biological-discovery/ : accessed October 29, 2025.

experimental biology."[903]

Nelson: "What's the best heuristic? 'We don't know what this does. Let's find out.'"[904]

Luskin: "Intelligent design provides a useful heuristic for understanding biological complexity while Darwinism often gets stuck."[905]

Junker: "If a function of an organ is generally assumed, this can provide an incentive to determine the still unknown function."[906]

Coppedge: "History has shown that approach often leads to fundamental new insights into the design of life, yielding practical applications for health and understanding."[907]

20.2.3 Evolution's Failed Predictions and Theory Flexibility

Hunter: "It is not controversial that a great many predictions made by Darwin's theory of evolution have been found to be false. There is less consensus, however, on how to interpret these falsifications. In logic, when a hypothesis predicts or entails an observation that is discovered to be false, then the hypothesis is concluded to be false. Not so in science.[908]

Gonzalez & Richards: "Recent work in the philosophy of science has revealed the degree to which high level theories tend to resist simple refutation; nevertheless, it's certainly a virtue of scientific proposals to be able to say what evidence would count against it."[909]

Hunter: "When a scientific theory makes a prediction that is discovered to be false, then sometimes the theory is simply modified to accommodate the new finding. Broad, umbrella theories, such as evolution, are particularly amenable to adjustments. Evolution states that naturalistic mechanisms are sufficient to explain the origin of species. This is a very broad statement capable of generating a wide variety of specific explanations about how evolution actually occurred. In fact evolutionists often disagree about these details. So if one explanation, dealing with a particular aspect of evolution, makes false predictions, there often are alternative explanations available to explain that particular aspect of evolution. Obviously the theory of evolution itself is not harmed simply because one particular sub-

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[903] Casey Luskin, "The Role of Natural Selection in Evolution Is Controversial Among Scientists," *Judging PBS*, https://judgingpbs.com/slide/dfp-slide3/ accessed 14 November 2025.
[904] Paul Nelson, "The Best and Worst Heuristics for Biological Discovery," *Science and Culture Today*, November 3, 2023, https://scienceandculture.com/2023/11/the-best-and-worst-heuristics-for-biological-discovery/ : accessed October 29, 2025.
[905] Casey Luskin, "Junk DNA and Science-Stopping," *Science and Culture Today*, 1 December 2006, https://scienceandculture.com/2006/12/junk_dna_and_sciencestopping/ : accessed 29 October 2025.
[906] Reinhard Junker, "Ähnlichkeiten," in Reinhard Junker and Siegfried Scherer, eds., *Evolution: Ein kritisches Lehrbuch*, 7th updated and expanded ed. (Gießen: Weyel Lehrmittelverlag, 2013), 201. Quoted passage translated from German.
[907] David Coppedge, "In 'Junk DNA,' Here Are Benefits of Seeking Function," *Science and Culture Today*, February 28, 2023, https://scienceandculture.com/2023/02/in-junk-dna-here-are-benefits-of-seeking-function/ : accessed October 29, 2025.
[908] Cornelius G. Hunter, "Why Investigate Evolution's False Predictions?" *Darwin's Predictions*, 2015, https://web.archive.org/web/20201008223153/https://sites.google.com/site/darwinspredictions/why-investigate-evolution-s-false-predictions : accessed 14 November 2025.
[909] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), 314.

hypothesis is shown to be wrong.

"Failed expectations are not necessarily a problem for a theory. . . . In fact evolutionists argue that false predictions made by the theory of evolution are not problems, but rather are signs of scientific progress. With each new finding, evolutionists say, we learn more about how evolution occurred. Nonetheless, it is worthwhile to review a theory's false predictions. A theory's track record can be highly informative. The history of false predictions generated by a theory tells us about its strengths and weaknesses, and how and why the theory is believed to be true."[910]

Joshua: You wrote a paper discussing 22 failed predictions of evolution.

Hunter: "Philosophers have debated the role and importance of predictions in the historical sciences, and how they are related to explanatory capacity. . . . The predictions described . . . [in the paper] do have strong implications for evolution's capacity to explain phenomena. For most of these predictions, the falsification has been followed by one or more proposed theory modifications to accommodate the new data. These modifications are often vague and they cause the theory to lose its parsimony. Perhaps most importantly they refute evolution's common cause argument and remove its so-called 'smoking gun.'"[911]

Joshua: What do you mean by parsimony?

Hunter: "In the Middle Ages, William of Occam pointed out that scientific theories ought to strive for simplicity, or parsimony."[912]

"When the natural laws that we observe are sufficient to explain a phenomenon, then we must not multiply entities and introduce gratuitous causes in the explanation. This is the principle of parsimony. But as the best naturalistic explanation becomes increasingly unlikely, then the parsimonious scientist begins to consider alternatives. The application of the principle of parsimony becomes more subtle."[913]

Witt: "Pundits reassure us that Darwinism has matured, that its critics are behind the times, that modern evolutionary theory is constantly being modified and expanded as new evidence emerges. But when a robust theory expands to absorb new data, its elegance is preserved. Darwinism, in contrast, has grown increasingly messy, with new explanatory patches constantly being added."[914]

Hunter: "Theory complexity is the enemy in science, and it would require volumes to explain all the details in today's theory of evolution. The reason why evolution is so complicated is that with each scientific failure, the theory is adjusted yet again. Today it resembles one of Rube Goldberg's

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[910] Cornelius G. Hunter, "Why Investigate Evolution's False Predictions?" *Darwin's Predictions*, 2015, https://web.archive.org/web/20201008223153/https://sites.google.com/site/darwinspredictions/why-investigate-evolution-s-false-predictions accessed 14 November 2025.

[911] Cornelius G. Hunter, "What False Predictions Tell Us About Evolution," *Darwin's Predictions*, 2015, https://web.archive.org/web/20201008223201/https://sites.google.com/site/darwinspredictions/what-false-predictions-tell-us-about-evolution : accessed 14 November 2025.

[912] Cornelius Hunter, "New Paper by Winston Ewert Demonstrates Superiority of Design Model," *Science and Culture Today*, 20 July 2018, https://scienceandculture.com/2018/07/new-paper-by-winston-ewert-demonstrates-superiority-of-design-model/ : accessed 29 October 2025.

[913] Cornelius G. Hunter, *Science's Blind Spot: The Unseen Religion of Scientific Naturalism* (Grand Rapids, MI: Brazos Press, 2007), 144–145.

[914] Jonathan Witt, "Darwin-only Crowd Desperately Rejects Any Competing Theory," *Discovery Institute*, 14 August 2005, https://www.discovery.org/a/2788/ : accessed 29 October 2025.

wonderful machines."[915]

Johnson: "If we assume that Darwinism is basically true then it is perfectly reasonable to adjust the theory as necessary to make it conform to the observed facts. The problem is that the adjusting devices are so flexible that in combination they make it difficult to conceive of a way to test the claims of Darwinism empirically."[916]

Hedin: "The theory of evolution shares characteristics in common with the geocentric model of the solar system. The geocentric model explained some things tolerably well, but it had to be jury-rigged more and more to explain away contrary evidence that continued to accumulate—in particular, the evidence of retrograde motion of planets, which did not fit at all neatly with the geocentric model. For the geocentric model, it was the convenient idea of epicycles, messy add-ons to the geocentric model that became necessary to get it to fit the data. For evolutionists, it's punctuated equilibrium, or co-option, or a dozen other highly strained just-so stories."[917]

Lönnig: "If the question of the correctness or incorrectness of a theory were fundamentally about fully completing an explanatory program, ***no theory could be refuted (falsified) at all*****,** because even the protagonists of all false theories could always object, in the event of a refutation, that these were merely 'unresolved detailed problems' (this would allow one to defend the Ptolemaic [geocentric] worldview with its epicycles even today)."[918]

Leisola: "The story of phlogiston shows how an established paradigm may persist in the face of contrary evidence because its supporters patch it up *ad nauseam* instead of following the evidence.

"The Darwinian theory of evolution is the phlogiston of our day, festooned with a myriad and growing number of patches. Evolution is slow and gradual, except when it's fast. It is dynamic and creates huge changes over time, except when it keeps everything the same for millions of years. It explains both extreme complexity and elegant simplicity. It tells us how birds learned to fly and how some lost that ability. Evolution made cheetahs fast and turtles slow. Some creatures it made big and others small; some gloriously beautiful, and some boringly grey. It forced fish to walk and walking animals to return to the sea. It diverges except when it converges; it produces exquisitely fine-tuned designs except when it produces junk. Evolution is random and without direction except when it moves towards a target. Life under evolution is a cruel battlefield except when it demonstrates altruism. Evolution explains virtues and vice, love and hate, religion and atheism. And it does all this with a growing number of ancillary hypotheses. Modern evolutionary theory is the Rube Goldberg of theoretical constructs. And what is the result of all this speculative ingenuity? Like the defunct theory of phlogiston, it explains everything without explaining anything well."[919]

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[915] Cornelius G. Hunter, "My Debate with Michael Ruse — Evolution as a Rube Goldberg Machine," *Science and Culture Today*, March 17, 2016, https://scienceandculture.com/2016/03/my_debate_with/ : accessed October 29, 2025.

[916] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 30.

[917] Eric Hedin, *Canceled Science: What Some Atheists Don't Want You to See*, Kindle edition (Seattle: Discovery Institute Press, 2021), 190. Page number reflects the Kindle edition mapped to ISBN 1637120001 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "evolution shares"; for print readers, the page number provides approximate placement.

[918] Wolf-Ekkehard Lönnig, *Die Evolution der karnivoren Pflanzen: Was die Selektion nicht leisten kann – das Beispiel Utricularia (Wasserschlauch)*, 3rd improved edition (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2012), 8–9 [PDF p. 22, 23]; digital file, https://www.weloennig.de/Utricularia2011Buch.pdf : 9 December 2025. Quoted passage translated from German.

[919] Matti Leisola and Jonathan Witt, *Heretic: One Scientist's Journey from Darwin to Design* (Seattle: Discovery Institute Press, 2018), 198–199.

Rammerstorfer: "The combination of variability and natural selection provides an approach that can explain everything from spartan practicality to structures that seem unnecessarily complicated and beautiful, from elegant synorganized constructions to short-sighted, flawed designs."[920]

Lönnig: "As result of this limitless, omniscient and omnipotent natural selection 'gradually eliminating all imperfections' now this 'crude', 'clumsy', 'highly inefficient', 'imperfect', 'suboptimal' and 'bad design' of the panda's thumb?

"So, you can choose: Imperfect or perfect, bad design or excellent design? There are evolutionists on both sides. Whatever the case – Evolution is always right."[921]

D. Witt: "If you've listened to evolutionary biologists long enough, it's hard to imagine anything that *wouldn't* make sense in the light of evolution. . . .

". . . If we can observe a slow, incremental diversification of species in the fossil record, then of course this confirms Darwin's hypothesis, because Darwin predicted that evolutionary change must be gradual. But if some groups of species seem to have diversified very rapidly, then, well, this is just evidence that evolution is faster and more powerful than had been supposed."[922]

Remine: "Astrology and natural selection are both extremely flexible. Their proponents can use this flexibility to avoid any test."[923]

Lönnig: "If, in principle, everything is compatible with selection theory, what does it really explain to us?"[924]

Luskin: "[Natural selection] is a very powerful tool—*it can explain both why things change, and why things stay the same.* Wow!"[925]

Hunter: "Ever since Darwin, evolutionary studies have seen a consistent history of . . . proliferation of competing and contradictory theories, . . . [and] increasingly high complexity of those theories."[926]

Remine: "The central illusion of evolution lies in making a wide array of contradictory mechanisms look like a seamless whole. There is no single evolutionary mechanism – there are countless. Evolutionary theory is a smorgasbord: a vast buffet of disjointed and conflicting mechanisms waiting to be chosen by the theorist. For any given question, the theorist invokes only those mechanisms that

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[920] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 61. Quoted passage translated from German.

[921] Wolf-Ekkehard Lönnig, *Do Pseudogenes and Endogenous Retroviruses Prove Evolution?* (self-published, 19 August 2025), 2; digital file, https://www.weloennig.de/EndogeneousRetroviruses.pdf : accessed 14 November 2025.

[922] Daniel Witt, "Why Evolution Is Undeniable," *Science and Culture Today*, 25 July 2025, https://scienceandculture.com/2025/07/why-evolution-is-undeniable/ : accessed 29 October 2025.

[923] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 482.

[924] Wolf-Ekkehard Lönnig, *Die Evolution der karnivoren Pflanzen: Was die Selektion nicht leisten kann – das Beispiel Utricularia (Wasserschlauch)*, 3rd improved edition (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2012), 82 [PDF p. 96]; digital file, https://www.weloennig.de/Utricularia2011Buch.pdf : accessed 9 December 2025. Quoted passage translated from German.

[925] Casey Luskin, "Response to the NCSE's Reply to *Explore Evolution* on Natural Selection," *Explore Evolution*, 2 March 2010, https://exploreevolution.com/2010/03/02/response_to_the_ncses_reply_to/ : 7 November 2025.

[926] Cornelius Hunter, "Evolution as a Theological Research Program," *Religions* 12, no. 9 (2021): 20, https://doi.org/10.3390/rel12090694 : accessed 13 January 2026. Pagination found only in the downloadable PDF.

look most satisfying. Yet, the next question elicits a different response, with other mechanisms invoked and neglected.

"Evolutionary theory has no coherent structure. It is amorphous. It is malleable and can easily adjust to disparate patterns of data. Evolution accommodates data like fog accommodates landscape."[927]

Sermonti: "Their theory of adaptation will adapt to anything."[928]

Johnson: "Popper saw that a theory that appears to explain everything actually explains nothing."[929]

Luskin: "This summary of these 3 simple rules of the Gene Evolution Game will help you explain anything:

- **Gene Evolution Game Rule 1:** Whenever you find sequence homology between two genes, just invoke a duplication event of some hypothetical, ancient ancestral gene, and you can explain how two different genes came to share their similarities.
- **Gene Evolution Game Rule 2:** When you need to explain how a gene acquired some new function, or evolved differences from another gene, just invoke the magic wand of natural selection. No need to demonstrate that there is any benefit to the new gene, or that a step-wise path to adaptation exists. Finally, natural selection is especially useful when part of your gene appears unique–since natural selection can change anything, just conclude that natural selection changed your gene so much that it no longer resembles its ancestor.
- **Gene Evolution Game Rule 3:** When a gene seems to be composed of the parts of several genes, just invoke duplications and rearrangements of all the DNA sequences you need, so you can get them all together in the right place. If you need to delete parts of a gene, or invert them, or transpose to a new location, just invoke different types of rearrangements as often and as liberally as you wish, and ba-da-bing, you've got your new gene!

And remember, *don't ask those other hard questions.* Just use these three rules and you can explain virtually anything. No details required!"[930]

20.2.4 Predictions of Intelligent Design

Joshua: Meyer, you list some predictions of ID theory in Appendix A of your book *Signature in the Cell*. Can you please give us an example?

Meyer: "If an intelligent (and benevolent) agent designed life, then studies of putatively bad designs in life . . . should reveal either (a) reasons for the designs that show a hidden functional logic or (b) evidence of decay of originally good designs."[931]

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[927] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 24.
[928] Giuseppe Sermonti, *Why Is a Fly Not a Horse?* (Seattle: Discovery Institute Press, Center for Science and Culture, 2005), 153.
[929] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 148.
[930] Casey Luskin, "How to Play the Gene Evolution Game," *Science and Culture Today*, February 22, 2010, https://scienceandculture.com/2010/02/how_to_play_the_gene_evolution/ : accessed October 29, 2025.
[931] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 497.

G. Kemper, H. Kemper, & Luskin: "Proponents of ID readily acknowledge that natural causes can act upon designed structures. Indeed, we experience the decay of designed objects every day."[932]

Joshua: So, intelligent design would predict that things like cancer may be the result of decay or degeneration.

Gauger: "Cancers develop when one or more normal functions in a cell are disrupted or broken."[933]

Coppedge: "Mutations to p53, in fact, are implicated in cancer — a situation where the checkpoint mechanism is broken, leading to uncontrolled cell division."[934]

Luskin: "The kinds of mutations that occur to cause cancer aren't constructive — they're destructive, in the sense that they are breaking natural molecular mechanisms and built-in genomic checkpoints that prevent cell replication."[935]

"Cancer is a Darwinian process – but what [it] reveals is that at the molecular level, the Darwinian mechanism typically works by breaking features, not by creating new ones."[936]

Gauger: "Cancer is proof of what happens when the Darwinian paradigm takes over. Yet our cells *do* maintain a balanced behavior in the face of so many ways to fail. That we exist at all, and that the balance is maintained nearly all the time, is in fact a wonder of design."[937]

Behe: "It does not follow that, because the parts of my car can break, the car was not designed. Nor does it follow that the Ford motor company is evil."[938]

Reeves: "Using our system engineering approach, we . . . generated a hypothesis for the Warburg effect, which is a well understood phenomenon in many cancer types. . . . Our hypothesis is that the Warburg effect is a normal system response to local organism injury or other temporary situations that require rapid tissue growth, such as during certain early developmental stages. Cancer occurs when the signal to turn off rapid tissue growth fails. The downstream effect is the continued signal for upregulated glycolysis, hence the Warburg effect. . . .

". . . Research that focuses on feedback mechanisms in the control system responsible for the rate of

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[932] Gary Kemper, Hallie Kemper, and Casey Luskin, *Discovering Intelligent Design: A Journey into the Scientific Evidence* (Seattle: Discovery Institute Press, 2013), 136.
[933] Ann Gauger, "A Leaky Faucet: Why Darwinian Evolution Leads to Loss of Information," *Science and Culture Today*, August 26, 2015, https://scienceandculture.com/2015/08/a_leaky_faucet/ : accessed October 29, 2025.
[934] David Coppedge, "In Life, Checkpoints and Error Correction Defy Darwinian Explanations," *Science and Culture Today*, August 2, 2023, https://scienceandculture.com/2023/08/in-life-checkpoints-and-error-correction-defy-darwinian-explanations/ : accessed October 29, 2025.
[935] Casey Luskin, "Fighting Cancer with Intelligent Design," *Science and Culture Today*, May 31, 2015, https://scienceandculture.com/2015/05/fighting_cancer/ : accessed October 29, 2025.
[936] Casey Luskin, "Two Peer-Reviewed Papers Apply Behe's 'Darwin Devolves' Thesis to Cancer," *Science and Culture Today*, 15 September 2025, https://scienceandculture.com/2025/09/two-peer-reviewed-papers-apply-behes-darwin-devolves-thesis-to-cancer/ : accessed 29 October 2025.
[937] Ann Gauger, "Does Cancer Build Anything New? A Response to Josh Swamidass," *Science and Culture Today*, September 20, 2016, https://scienceandculture.com/2016/09/does_cancer_bui/ : accessed October 29, 2025.
[938] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 196. Page number reflects the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "does not follow"; for print readers, the page number provides approximate placement.

glycolysis upregulation should be able to verify or falsify our hypothesis."[939]

Wells: In 2003, I used intelligent design to develop a hypothesis about centrioles, microscopic structures in animal cells that look like tiny turbines. There are no evolutionary intermediates to support a Darwinian explanation for the origin of centrioles, and Darwinists have been relatively uninterested in them—especially in their resemblance to miniature machines. From an ID perspective, however, centrioles may have been *designed* to function as tiny turbines. If so, their occasional malfunction during cell division could be an early step in the origin of cancer."[940]

Meyer: "The outcome of [Wells'] work won't directly confirm or disconfirm intelligent design, or neo-Darwinism for that matter, since the truth of neither theory depends upon whether any specific structure is or is not a turbine. But it illustrates how an ID perspective can prove fruitful for generating new testable hypotheses and predictions about the structure and function of the cell (as well as the causes of cellular malfunctions when they occur)."[941]

Lönnig: "As to the law of recurrent variation, one of its most basic predictions is 'treating homozygous lines with mutagenic agents generates large, *but clearly finite, spectra of mutants*' in a saturation mutagenesis program, *excluding* the random generation of new complex functional sequences (entirely new genes and new gene reaction chains for novel synorganized anatomical structures and/or physiological functions) by induced or naturally occurring random mutations. Thus, the law would be refuted by any spontaneous, accidental formation of new complex functional genes and/or novel gene reaction chains with correspondingly new functional phenotypes."[942]

Wells: "The hypothesis of irreducible complexity can be tested: if a single system composed of several well-matched interacting parts continues to function when any one of the parts is removed, then that system is not irreducibly complex."[943]

Luskin: "In his experiments, [flagellum expert Scott Minnich] knocked out every flagellar gene, one by one, and found that the flagellum is irreducibly complex."[944]

Witt: "Behe predicted that scientists would not uncover a continuously functional Darwinian pathway from a simple precursor to the bacterial flagellum, and that any evolutionary pathway that someone might describe would presuppose other irreducibly complex systems. He further argued that for all of the above reasons taken together, intelligent design is the best explanation for the origin of the bacterial flagellum.

"How might one test and discredit Behe's argument? Demonstrate, or at least describe, a realistic,

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[939] Emily Reeves, "Studying Biology with System Engineering Principles," *Science and Culture Today*, October 29, 2024, https://scienceandculture.com/2024/10/studying-biology-with-system-engineering-principles/ : accessed October 29, 2025.

[940] Jonathan Wells, *The Politically Incorrect Guide to Darwinism and Intelligent Design* (Washington, DC: Regnery Publishing, 2006), 205.

[941] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 487.

[942] Wolf-Ekkehard Lönnig, "Mutagenesis in *Physalis pubescens* L. ssp. *floridana*: Some Further Research on Dollo's Law and the Law of Recurrent Variation," *Floriculture and Ornamental Biotechnology* (Global Science Books, 2010), 2; digital file, https://www.weloennig.de/evolution/PhysalisOriginalPaper.pdf : accessed 14 November 2025.

[943] Jonathan Wells, *The Politically Incorrect Guide to Darwinism and Intelligent Design* (Washington, DC: Regnery Publishing, 2006), 139.

[944] Casey Luskin, "Traipsing Into Evolution Book Release Event Notes," *Science and Culture Today*, May 30, 2006, https://scienceandculture.com/2006/05/traipsing_into_evolution_relea_1/ : accessed October 29, 2025.

continuously functional Darwinian pathway from simple ancestor to present motor. This would falsify Behe's design argument."[945]

Behe: "How about Professor Coyne's concern that, if one system were shown to be the result of natural selection, proponents of ID could just claim that some other system was designed? I think the objection has little force. If natural selection were shown to be capable of producing a system of a certain degree of complexity, then the assumption would be that it could produce any other system of an equal or lesser degree of complexity. If Coyne demonstrated that the flagellum (which requires approximately forty gene products) could be produced by selection, I would be rather foolish to then assert that the blood clotting system (which consists of about twenty proteins) required intelligent design."[946]

Witt: "If Behe's flagellum argument did fail, then design theorists would still stick to ID for the very good reason that there would remain other powerful lines of evidence for intelligent design — from the origin of the first life to the fine tuning of the laws and constants of physics, to the correlation between life and discovery described in *The Privileged Planet*."[947]

Meyer: "After explaining how intelligent design can be tested and how it does make certain kinds of predictions, I commonly hear the objection that the theory of intelligent design is not scientific, because it cannot make other kinds of predictions. Critics correctly point out, for example, that we cannot predict with complete accuracy what intelligent agents will do, since, presumably, intelligent agents possess the capacity to act freely of their own volition. . . .

"Yet standard materialistic theories of evolution (whether chemical or biological) do not make predictions of this kind either. Specifically, evolutionary theory does not make predictions about the future course of evolution."[948]

20.2.5 Mechanism and the Explanatory Status of Intelligent Design

Joshua: What do you think about the argument that ID theory is not an explanation because it doesn't provide a mechanism?

Moreland: "Does saying that my wife set the dining room table explain why the dining room table is set? Yes it does, but it leaves out important details about *how* she set the table. . . . But does it not explain *something* to say that my wife set the dining room table, even if I don't know the mechanism she used to accomplish this? I think it does. For example, it would explain the fact that the table setting didn't happen by chance or necessity. An intelligent mind did it. Also, the arrangement might show that my wife did it and not one of my kids. The assumption underlying this criticism is that if you don't

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[945] Jonathan Witt, "Intelligent Design Is Testable. Is Darwinism?" *Science and Culture Today*, November 9, 2016, https://scienceandculture.com/2016/11/intelligent_des_31/ : accessed October 29, 2025.
[946] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 131–132. Page numbers reflect the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "Coyne's concern"; for print readers, the page range provides approximate placement.
[947] Jonathan Witt, "Intelligent Design Is Testable. Is Darwinism?" *Science and Culture Today*, November 9, 2016, https://scienceandculture.com/2016/11/intelligent_des_31/ : accessed October 29, 2025.
[948] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 430.

cite a naturalistic mechanism, you haven't explained it. But this assumption is false."[949]

Meis: "Anyone who claims that the book 'The Origin of the Species' had no author is forced to explain, and not the one who claims that this work is of intelligent origin. Anyone who says that the letters of this book were formed into words and meaningful sentences by chance must explain how this is supposed to work only with the help of natural laws. Anyone who posits an intelligent book author can sit back and relax, because the statement 'with the help of intelligence' is already the explanation of how."[950]

Meyer: "Theoretically there are at least two possible types of causes: mechanistic and intelligent. The demarcationist has yet to offer a noncircular reason for excluding the latter type."[951]

"To say that all scientific explanations must provide a mechanism is equivalent to saying that they must cite *materialistic* causes — precisely what the principle of methodological naturalism asserts. . . .

". . . The theory of intelligent design does not provide a mechanistic account of the *origin* of biological information or form, nor does it attempt to. Instead, it offers an *alternative* causal explanation involving a mental, rather than a necessarily or exclusively material, cause for the origin of that reality. It attributes the origin of information in living organisms to thought, to the rational activity of a mind, not a strictly material process or mechanism. That does not make it deficient as a materialistic or mechanistic explanation. It makes it an *alternative* to that kind of explanation. Advocates of intelligent design do not propose intelligent causes because they cannot think of a possible mechanistic explanation for the origin of form or information. They propose intelligent design because they think it provides a better, more causally adequate explanation for these realities. Given what we know from experience about the origin of information, materialistic explanations are the deficient ones. . . .

"An illustration from archaeology helps explain how this can be so. . . . Years ago explorers of a remote island in the southwestern Pacific Ocean discovered a group of enormous stone figures. The figures displayed the distinctive shape of human faces. These figures left no doubt as to their ultimate origin in thought. Nevertheless, archeologists still don't know the exact means by which they were carved or erected. The ancient head carvers might have used metallic hammers, rock chisels, or lasers for that matter. Though archaeologists lack the evidence to decide between various hypotheses about *how* the figures were constructed, they can still definitely infer *that* intelligent agents made them. In the same way, we can infer *that* an intelligence played a causal role in the origin of the Cambrian animals, even if we cannot decide what material means, if any, the designing intelligence used to transmit the information, or shape matter, or impart its design ideas to living form. Although the theory of intelligent design infers *that* an intelligent cause played a role in shaping life's history, it does not say *how* the intelligent cause affected matter. Nor does it have to do so."[952]

D. Witt: "If someone insisted that the Easter Island heads could be explained by unguided natural processes, you would certainly expect them to give you a clear explanation of how, or why such

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[949] J.P. Moreland, "Intelligent Design and the Nature of Science," in H. Wayne House, ed., *Intelligent Design 101: Leading Experts Explain the Key Issues* (Grand Rapids, MI: Kregel Publications, 2008*),* 64.

[950] Karl Friederich Meis, "Kritikpunkt 4," *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, last updated 11 June 2022, https://www.intelligentdesigner.de/kritikpunkt-4/ : accessed 26 August 2025. Quoted passage translated from German.

[951] Stephen C. Meyer, "The Scientific Status of Intelligent Design: The Methodological Equivalence of Naturalistic and Non-Naturalistic Origins Theories," *Discovery Institute*, 13 November 2005, https://www.discovery.org/a/2834/ : accessed 29 October 2025.

[952] Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (New York: HarperOne, 2013), 394-397.

improbable shapes were demanded by the laws of nature. And you probably wouldn't be much moved if they started complaining along the lines . . . that you weren't being fair because *you* hadn't explained how your beloved designers created the heads *either*."[953]

Gauger: "The requirement for a material cause, a mechanism, can lead to the odd conclusion that Isaac Newton's law of gravity is not scientific because he famously refused to provide a mechanistic explanation for action at a distance."[954]

Meyer: "Today one would be hard-pressed to find anybody who denies that Newton's famous theory qualified as scientific."[955]

Gauger: "Likewise Einstein's E = mc2 has no mechanism."[956]

Meyer: "There seems little justification for asserting that the theory of continental drift became scientific only after the advent of plate tectonics. While the mechanism provided by plate tectonics certainly helped render continental drift a more persuasive theory,76 it was nevertheless not strictly necessary to know the mechanism by which continental drift occurs (1) to know or theorize that drift *had occurred* or (2) to regard the continental drift theory as scientific."[957]

Luskin: "I am an extremely firm believer that plate tectonics is one of the best supported theories in geology, and I believe it is correct and has great explanatory power. But my support for plate tectonics doesn't negate the fact that geologists, including me, still have important unanswered questions about how it works.

"There is a similarity here to intelligent design. ID proponents are often asked, 'What is the mechanism behind intelligent design?' We can see plenty of evidence that intelligent design in nature is real, and the cause of that design is intelligent agency. But it's not always clear exactly how that design is instantiated in nature. In other words, the 'mechanism,' for lack of a better term, of intelligent design is not necessarily clear. Does this mean that an inference to design is invalid? No, it does not.

"If subduction teaches us anything about the philosophy of science, it's that we don't need to have a complete understanding of the mechanism behind an aspect of nature to be able to conclude that it — that particular aspect of nature — is real. If this principle can be applied to something as well-established as subduction, then surely it's improper to refuse to grant the point in regard to the theory of intelligent design."[958]

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[953] Daniel Witt, "How Did the Designer Do It?" *Science and Culture Today*, 14 July 2025, https://scienceandculture.com/2025/07/how-did-the-designer-do-it/ : accessed 29 October 2025.
[954] Ann Gauger, "What's the Mechanism of Intelligent Design?" *Science and Culture Today*, November 13, 2015, https://scienceandculture.com/2015/11/whats_the_mecha/ : accessed October 29, 2025.
[955] Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (New York: HarperOne, 2013), 388.
[956] Ann Gauger, "What's the Mechanism of Intelligent Design?" *Science and Culture Today*, November 13, 2015, https://scienceandculture.com/2015/11/whats_the_mecha/ : accessed October 29, 2025.
[957] Stephen C. Meyer, "The Scientific Status of Intelligent Design: The Methodological Equivalence of Naturalistic and Non-Naturalistic Origins Theories," *Discovery Institute*, 13 November 2005, https://www.discovery.org/a/2834/ : accessed 29 October 2025.
[958] Casey Luskin, "Subduction and the 'Mechanism' of Intelligent Design," *Science and Culture Today*, February 24, 2021, https://scienceandculture.com/2021/02/subduction-and-the-mechanism-of-intelligent-design/ : accessed October 29, 2025.

20.2.6 Intelligent Design's Scientific Productivity in Contrast to Evolution

Snoke: "Opponents of the intelligent design (ID) approach to biology have sometimes argued that the ID perspective discourages scientific investigation. To the contrary, it can be argued that the most productive new paradigm in systems biology is actually much more compatible with a belief in the intelligent design of life than with a belief in neo-Darwinian evolution. This new paradigm in system biology, which has arisen in the past ten years or so, analyzes living systems in terms of systems engineering concepts such as design, information processing, optimization, and other explicitly teleological concepts. This new paradigm offers a successful, quantitative, predictive theory for biology. Although the main practitioners of the field attribute the presence of such things to the outworking of natural selection, they cannot avoid using design language and design concepts in their research, and a straightforward look at the field indicates it is really a design approach altogether."[959]

Rammerstorfer: "Evolutionary theorists are constantly caught up in the fact that organisms appear to be designed. It's not simply that biologists use teleological expressions as if they had a choice: teleological thinking precedes teleological language, and this is very successful in biology. . . . It is up to evolutionary theorists to show conclusively why teleology in the world of organisms (and hence the teleologically permeated biological research with its correspondingly coined terms) is only an illusion."[960]

Snoke: "Many have demanded that the intelligent design paradigm must come up with a successful, predictive, quantitative program for biology, but it seems that such a program already exists right under our noses."[961]

Miller: "Michael Behe's concept of irreducible complexity has implicitly become a central [tenet] of the field. Researchers would rarely use such language or acknowledge the implications, but this conclusion is unmistakable."[962]

Cassell: "On the ID view, reverse engineering in biology works so well because the biological systems we are learning from were indeed engineered—that is, were intelligently designed. . . .

". . . We lack uniform and repeated experience of blind evolutionary processes engineering new systems, whereas we find intelligent agents doing this all the time."[963]

Reeves: "Biology is actually a showcase of elegant designs with displays of optimality in core infrastructure. This optimality raises the bar for random mutation and natural selection and raises the possibility that not only may biology reflect good design but in many cases it may be the *best* design

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[959] David Snoke, "Systems Biology as a Research Program for Intelligent Design," *BIO-Complexity* 2014 (3) (Biologic Institute, 2014), abstract; digital file, https://bio-complexity.org/ojs/index.php/main/article/download/BIO-C.2014.3/86 : accessed 14 November 2025. The digital file is accessible via doi:10.5048/BIO-C.2014.3

[960] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 40. Quoted passage translated from German.

[961] David Snoke, "Systems Biology as a Research Program for Intelligent Design," *BIO-Complexity* 2014 (3) (Biologic Institute, 2014), 9; digital file, https://bio-complexity.org/ojs/index.php/main/article/download/BIO-C.2014.3/86 : accessed 14 November 2025

[962] Brian Miller, "End of the Road for the Intelligent Design Debate?" *Science and Culture Today*, August 23, 2021, https://scienceandculture.com/2021/08/end-of-the-road-for-the-intelligent-design-debate/ : accessed October 29, 2025. The original text reads "tenant," here corrected to "tenet."

[963] Eric Cassell, *Animal Algorithms: Evolution and the Mysterious Origin of Ingenious Instincts* (Seattle: Discovery Institute Press, 2021), 176–177.

given physical constraints. Discovery of optimality in biology urges caution in labelling 'poor design' in unclear cases because optimality suggests good overall design. Add to this the history of embarrassing 'poor design' enigmas in biology stripped of their pomp by recent research and all that remains is a reminder that overall biology appears very well designed and unaccounted for by evolutionary explanations.

"Perhaps the biggest mistake in first impressions of biological design is to overlook constraints. Although many biologists have little exposure to the idea of trade-offs, biology has many constraints. Self-replication, physical laws, chemical properties, and interacting ecosystems all have their own demands. Each of these broad categories has beneath its surface a plethora of subcategories. Understanding constraints is key to determining if a design is good for the intended function. *Without considering all relevant constraints and empirical testing it is not possible to say whether an aspect in biology is poorly designed.* But when scientists have made assumptions about function, examined some design constraints, and done empirical testing or simulations, they discover optimality in core biological infrastructure. This wrecks the idea of overall poor design in biology and leaves us grappling with the question: Is natural selection the best explanation for the type of design we see in biology?"[964]

Miller: "The underlying logic of the standard evolutionary model predicts that deficient design and nonfunctional remnants of organisms' evolutionary past should litter the biosphere. . . .

"The most apparent difference in predictions between intelligent design and undirected evolution is the extent to which life displays suboptimal/nonfunctional versus optimal design. . . .

". . . Systems biologists now recognize that assuming optimal design leads to the most productive research."[965]

Rammerstorfer: "In nature, we . . . predominantly find 'good designs.' Is this really to be expected if one postulates an unguided process as the explanation for origins . . . ? Or would not the exact opposite be expected in this case: predominantly 'bad designs' (maximally optimized perhaps, but still second-rate) and occasionally 'good designs'?"[966]

Miller: "The vast preponderance of the evidence matches the design-based prediction of optimality. And it directly contradicts a central prediction of any theory of undirected evolution."[967]

Skell: "I recently asked more than 70 eminent researchers if they would have done their work differently if they had thought Darwin's theory was wrong. The responses were all the same: No.

"I also examined the outstanding biodiscoveries of the past century: the discovery of the double helix; the characterization of the ribosome; the mapping of genomes; research on medications and drug reactions; improvements in food production and sanitation; the development of new surgeries; and others. I even queried biologists working in areas where one would expect the Darwinian paradigm to

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[964] Emily Reeves, "Optimality Recognized in Core Biological Infrastructure," *Science and Culture Today*, May 19, 2021, https://scienceandculture.com/2021/05/optimality-recognized-in-core-biological-infrastructure/ : accessed October 29, 2025.

[965] Brian Miller, "Why Systems Biologists Now Assume Life Is Optimally Designed," *Science and Culture Today*, August 27, 2021, https://scienceandculture.com/2021/08/why-systems-biologists-now-assume-life-is-optimally-designed/ : accessed October 29, 2025.

[966] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 88. Quoted passage translated from German.

[967] Brian Miller, "Why Systems Biologists Now Assume Life Is Optimally Designed," *Science and Culture Today*, August 27, 2021, https://scienceandculture.com/2021/08/why-systems-biologists-now-assume-life-is-optimally-designed/ : accessed October 29, 2025.

have most benefited research, such as the emergence of resistance to antibiotics and pesticides. Here, as elsewhere, I found that Darwin's theory had provided no discernible guidance, but was brought in, after the breakthroughs, as an interesting narrative gloss."[968]

Rammerstorfer: "It should also be noted that the prime examples of the practical use of the concept of evolution (resistance and evolutionary strategy in technology/BIONICS) do not require the acceptance of comprehensive evolution; more specifically, they only presuppose an acceptance of microevolutionary processes, but not their extrapolation into the realm of macroevolution."[969]

Luskin: "Evolutionary biologist Jerry Coyne . . . admitted in *Nature* that 'if truth be told, evolution hasn't yielded many practical or commercial benefits. Yes, bacteria evolve drug resistance, and yes, we must take countermeasures, but beyond that there is not much to say.'"[970]

Wells: "Certainly, there are some areas of biology in which Darwinian evolution plays an important role. As we have seen, there is good evidence that mutations and natural selection are significant factors at the molecular level, especially in rendering bacteria resistant to antibiotics, or insects and other pests resistant to pesticides. There is also good evidence that natural selection can produce limited modifications within existing species such as Darwin's finches. Surely, anyone who wants to make sense of these phenomena would be foolish to ignore evolutionary theory.

"Promoters of Darwinism typically use evidence from antibiotic and pesticide resistance, and minor modifications within species, to justify their claim that the economically important fields of medicine and agriculture depend on their theory. Yet for most practical purposes Darwinian evolution is irrelevant to medicine— even in dealing with antibiotic resistance. . . .

"Agriculture has also been quite successful without help from Darwinism. Of course, the domestic breeding of crops and livestock is important, but agricultural science was around long before Darwin."[971]

D. Ewert: "Knowledge of evolution is not necessary for becoming a good molecular biologist or a good medical doctor."[972]

Wells: "There are many other areas of biology which do quite well without Darwinian evolution. In fact, most major disciplines in modern biology— including embryology, anatomy, physiology, paleontology and genetics— were pioneered by scientists who had never heard of Darwinian evolution— or who (like von Baer) explicitly rejected it."[973]

Skell: "What modern experimental biologists study are the mechanisms by which living organisms maintain their stability, without evolving. Organisms oscillate about a median state; and if they deviate

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[968] Philip S. Skell, "Why Do We Invoke Darwin? Evolutionary Theory Contributes Little to Experimental Biology," *Discovery Institute*, 29 August 2005, https://www.discovery.org/a/2816/ : accessed 29 October 2025.
[969] Markus Rammerstorfer, *Nur eine Illusion? Biologie und Design* (Marburg: Tectum Verlag, 2006), 38n6. Quoted passage translated from German.
[970] Casey Luskin, "Francis Collins and the Overselling of Evolution," *Science and Culture Today*, August 15, 2009, https://scienceandculture.com/2009/08/francis_collins_oversells_the/ : accessed October 29, 2025.
[971] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 245–246.
[972] Donald L. Ewert, interview with Casey Luskin, "What Does Evolution Have to Do With Immunology? Not Much," *ID the Future* podcast, episode 465 (Discovery Institute, April 6, 2011), audio, at 8:50–8:59, https://idthefuture.com/465/ : accessed 14 November 2025.
[973] Jonathan Wells, *Icons of Evolution: Science or Myth? Why Much of What We Teach About Evolution Is Wrong* (Washington, DC: Regnery Publishing, 2000), 246.

significantly from that state, they die. It has been research on these mechanisms of stability, not research guided by Darwin's theory, which has produced the major fruits of modern biology and medicine."[974]

Wells: "In 2005, molecular biologist Douglas Axe started the Biologic Institute in Redmond, Washington to support both theoretical and experimental work guided by the assumption that 'life appears to have been designed because it really *was* designed.'"[975]

Joshua: The Evolutionary Informatics Lab is also doing ID-based research.

Luskin: "First, the lab developed a methodology for studying the degree to which information is smuggled into evolutionary algorithms. Then, the researchers applied that methodology to various well-known programs like *ev*, Avida, and Dawkins' 'Weasel Simulation,' and successfully identified sources of 'active information' in each. As the lab's website promised, their research has shown that even the best efforts of ID-critics cannot escape the fact that intelligence is required to generate new information."[976]

Lönnig: Research on irreducible and/or specified complexities in biology definitely does not constitute metaphysical research programmes, but is at least as scientifically valid as the SETI (search for extraterrestrial intelligence), which is presently supported by thousands of scientists worldwide, not to mention the affiliated network of more than 4 million computers in over 200 countries around the globe. . . . Irreducible and specified complexity are inspiring tools that can and should be empirically investigated."[977]

Behe: "The future prospects for design are excellent, because they rest not on any person's or group's preferences, but on the data."[978]

Wells: "There are two ways ID can guide scientific research. First, it can suggest theoretical or experimental tests to determine whether certain things are better explained by intelligent design or Darwinian evolution. Second, it can serve as the basis for testable new hypotheses that are unlikely to have emerged from a Darwinian perspective."[979]

Laufmann & Glicksman: "The design-engineering theoretical framework . . . offers a much richer and more capable set of creative tools than a Darwinian materialistic framework. . . .

"It aligns with the immense engineering complexity and coherence of living systems. . . . The

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[974] Philip S. Skell, quoted in "Why Do We Invoke Darwin? Philip Skell Responds," *Discovery Institute*, 1 September 2005, https://www.discovery.org/a/2950/ : accessed 29 October 2025.

[975] Jonathan Wells, *Zombie Science: More Icons of Evolution*, Kindle edition (Seattle: Discovery Institute Press, 2017), 186. Page number reflects the Kindle edition mapped to ISBN 1936599449 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "2005 molecular"; for print readers, the page number provides approximate placement.

[976] Casey Luskin, "The Evolutionary Informatics Lab: Putting Intelligent Design Predictions to the Test," *Science and Culture Today*, February 7, 2012, https://scienceandculture.com/2012/02/the_evolutionar/ : accessed October 29, 2025.

[977] Wolf-Ekkehard Lönnig, "Dynamic Genomes, Morphological Stasis, and the Origin of Irreducible Complexity" (self-published, 3 August 2005; originally published in *Dynamical Genetics*, eds. Valerio Parisi, Valeria De Fonzo, and Filippo Aluffi-Pentini [Kerala, India: Research Signpost, 2004]), 116 [PDF 16]; digital file, https://www.weloennig.de/DynamicGenomes.pdf : accessed 13 November 2025.

[978] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 271.

[979] Jonathan Wells, *The Politically Incorrect Guide to Darwinism and Intelligent Design* (Washington, DC: Regnery Publishing, 2006), 203.

framework also aligns well with the human design intuition."[980]

"If this new framework is on the right track, the scientific (and engineering, and medical) objective must be to discover and formulate the 'rules of engagement' for living systems."[981]

Dembski: "Intelligent design can . . . function as a heuristic for guiding research, inspiring biologists to look for engineering solutions to biological problems that might otherwise escape them."[982]

Johnson: "Science would not come to an end, because the task would remain of deciphering the languages in which genetic information is communicated, and in general finding out how the whole system *works*."[983]

Luskin: "ID encourages scientists to do research to test for high levels of complex and specified information in biology in the form of the fine-tuning of protein sequences. . . .

". . . ID has inspired scientists to seek and find instances of fine-tuning of the laws and constants of physics to allow for life, leading to new fine-tuning arguments such as the Galactic Habitable Zone. . . .

". . . ID leads scientists to understand intelligence as a cause of biological complexity, capable of being scientifically studied, and to understand the types of information it generates.

". . . ID directs both experimental and theoretical research to investigate the limitations of Darwinian evolution to produce traits that require multiple mutations in order to function. . . .

". . . ID produces theoretical research into the information-generative powers of Darwinian searches, leading to the discovery that the search abilities of Darwinian processes are limited, which has practical implications for the viability of using genetic algorithms to solve problems.

". . . ID has helped scientists develop proper measures of biological information, leading to concepts like complex and specified information or functional sequence complexity. . . .

". . . ID encourages scientists to reverse-engineer molecular machines — like the bacterial flagellum — to understand their function like machines, and to understand how the machine-like properties of life allow biological systems to function.

". . . ID causes scientists to view cellular components as 'designed structures rather than accidental by-products of neo-Darwinian evolution,' allowing scientists to propose testable hypotheses about cellular function and causes of cancer.

". . . ID helps scientists explain the cause of the widespread features of conflicting phylogenetic trees and 'convergent evolution' by producing models where parts can be reused in non-treelike patterns. . . .

". . . ID allows scientists to understand and predict patterns in the fossil record, showing explosions of biodiversity (as well as mass extinction) in the history of life.

". . . ID has inspired scientists to investigate the computer-like properties of DNA and the genome in the hopes of better understanding genetics and the origin of biological systems. ID has also inspired

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[980] Steve Laufmann and Howard Glicksman, *Your Designed Body* (Seattle: Discovery Institute Press, 2022), 397.
[981] Steve Laufmann and Howard Glicksman, *Your Designed Body* (Seattle: Discovery Institute Press, 2022), 431.
[982] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 272.
[983] Phillip E. Johnson, *Darwin on Trial*, 2nd ed. (Downers Grove, IL: InterVarsity Press, 1993), 112.

scientists to seek function for noncoding junk-DNA, allowing us to understand development and cellular biology."[984]

Reeves: "The theory of intelligent design . . . , which suggests that certain aspects of nature are better explained by intelligent agency than by law-like regularities and chance events, predicts design patterns in nature. This is because design patterns are technically derived solutions — derived by designers — to challenges encountered within the design space."[985]

Meyer: "I dropped by to visit a software engineer who was working closely with one of the molecular biologists from the Biologic Institute. . . . The software engineer had been studying how the cell processes information in order to write a computer simulation of gene expression. He showed me a book called *Design Patterns*, a standard text for software engineers. The text was full of different design strategies—strategies for processing, storing, copying, organizing, accessing, and correcting digitally encoded strings of information.

"My colleague told me that he recognized many of these specific design patterns and strategies at work in the cell. He expressed his awe at the 'sophistication of its design logic' and its resemblance to that used in the software industry. He said the cell often employs a functional logic that mirrors our own, but exceeds it in the elegance of its execution. 'It's like we are looking at 8.0 or 9.0 versions of design strategies that we have just begun to implement. When I see how the cell processes information,' he said, 'it gives me an eerie feeling that someone else figured this out before we got here.'"[986]

Reeves: "Design patterns in cells . . . provide an outstanding illustration of how design-based thinking can further our understanding of biology."[987]

Dilley: "Science often ceases when scientists become convinced that they have found true answers—few complain, for example, that the second law of thermodynamics 'shuts down' further inquiry about the viability of perpetual motion machines. The fact that the second law closes this area of research is viewed as a virtue—a real find—not as a vice."[988]

Meis: "Suppose scientists had been researching for decades now for explanations of how the structures in Mount Rushmore (the four presidents' heads) were formed. They have researched the behavior of the wind, the influence of rain, soil erosion, etc., in detail and have devised quite complex hypotheses that are supposed to explain the presidential quartet. Finally, one of the scientists says: 'Maybe it wasn't the wind at all. Maybe someone carved these heads into the rock.' Now imagine that all other scientists would point the finger at him and exclude him from their circle as a pseudoscientific lateral thinker because he hindered science. Someone who has chiseled these heads into the rock is

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[984] Casey Luskin, "It's Intelligent Design, Not Darwinism, that Drives Scientific Progress," *Science and Culture Today*, December 15, 2023, https://scienceandculture.com/2023/12/its-intelligent-design-not-darwinism-that-drives-scientific-progress/ : accessed October 29, 2025.

[985] Emily Reeves, "Review Article Explores Design Patterns in Biological Cells," *Science and Culture Today*, August 1, 2024, https://scienceandculture.com/2024/08/review-article-explores-design-patterns-in-biological-cells/ : accessed October 29, 2025.

[986] Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperOne, 2009), 369.

[987] Emily Reeves, "Review Article Explores Design Patterns in Biological Cells," *Science and Culture Today*, August 1, 2024, https://scienceandculture.com/2024/08/review-article-explores-design-patterns-in-biological-cells/ : accessed October 29, 2025.

[988] Stephen Craig Dilley, *Methodological Naturalism, History, and Science* (Ph.D. diss., Arizona State University, 2007), 144; digitized copy privately held by the author.

only a stopgap. In addition, the entire research is at an end.

"Of course, this would be nonsense! The fact that the presidents' heads were deliberately carved into the rock by intelligent designers is the obvious explanation."[989]

D. Witt: "Scientists work themselves out of a job all the time. Normally, when they do, they just move on to *another* question. Isn't that better than throwing the answer in the garbage, just to ensure you can keep searching for it forever?"[990]

Lönnig: "When we reach the limits of what can be researched, it is both arrogance and stupidity to deny the unexplorable. If, in the course of our research, we encounter phenomena that indicate the work of 'an intelligence,' then we must accept this reality just as we do the other realities accessible to our research methodology."[991]

Luskin: "Ironically, when critics claim that research is not permitted to detect design because that would stop science, it is they who hold science back by preventing scientists from investigating the scientific theory of intelligent design."[992]

Flannery: "What Eugenie Scott and others who make this argument are actually claiming is that scientists *must* invoke *only* natural causes functioning through natural laws in *thoroughly* non-teleological ways. Thus, what's being stopped is their commitment to MN. . . .

". . . Those who purvey the 'ID is a science stopper' argument are not interested in protecting science but rather their own view of what science should be. "[993]

Lennox: "Believing that the engine of the car had been designed by Mr Ford would not stop anybody from investigating scientifically how the engine worked – in fact it might well spur them on to do so."[994]

Dembski & Ewert: "Let's put to rest a common misconception about biological design inferences, namely, that they are science killers. . . .

". . . Real biological design will leave biologists with plenty to do and understand."[995]

Lönnig: "The intelligent design approach has an impact on all areas of biology, integrates all previous factual results into one theory and is itself further modified by these results until today and in the

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[989] Karl Friederich Meis, "Kritikpunkt 8," *Intelligent Design: Ein Modell zum Nachweis von Design und Teleologie in der Natur*, last updated 11 June 2022, https://www.intelligentdesigner.de/kritikpunkt-8/ : accessed 29 August 2025. Quoted passage translated from German.

[990] Daniel Witt, "Aliens in the Garbage," *Science and Culture Today*, March 11, 2024, https://scienceandculture.com/2024/03/aliens-in-the-garbage/ : accessed October 29, 2025.

[991] Wolf-Ekkehard Lönnig, *Ursprung und Entwicklung des Pflanzenreichs im Spiegel älterer und moderner Auffassungen: Kritische Betrachtung unter Auswahl geeigneter Beispiele* (MSc thesis, Free University of Berlin, 1971), 130 (PDF pagination); digital file, weloennig.de/Staatsexamensarbeit.pdf : accessed 7 November 2025. Quoted passage translated from German. The PDF version consulted includes addenda not present in the original thesis.

[992] Casey Luskin, "It's Intelligent Design, Not Darwinism, that Drives Scientific Progress," *Science and Culture Today*, December 15, 2023, https://scienceandculture.com/2023/12/its-intelligent-design-not-darwinism-that-drives-scientific-progress/ : accessed October 29, 2025.

[993] Michael Flannery, "Intelligent Design as a 'Science Stopper'? Here's the Real Story," *Science and Culture Today*, 20 August 2011, https://scienceandculture.com/2011/08/id_a_science_stopper_heres_the/ : accessed 29 October 2025.

[994] John C. Lennox, *God's Undertaker: Has Science Buried God?* (Oxford: Lion Books, 2009), 51.

[995] William A. Dembski and Winston Ewert, *The Design Inference: Eliminating Chance through Small Probabilities*, 2nd ed., revised and expanded (Seattle: Discovery Institute Press, 2023), 393–394.

future. Intelligent design brings new questions to each individual biological discipline."[996]

Behe: "The theory of intelligent design promises to reinvigorate a field of science grown stale from a lack of viable solutions to dead-end problems. The intellectual competition created by the discovery of design will bring sharper analysis to the professional scientific literature and will require that assertions be backed by hard data. The theory will spark experimental approaches and new hypotheses that would otherwise be untried. A rigorous theory of intelligent design will be a useful tool for the advancement of science in an area that has been moribund for decades."[997]

Lönnig: "Darwinism . . . has led wide areas of embryology, morphology, and paleontology as well as other biological disciplines, in some cases for over a hundred years, into false paths, and furthermore up to the present day is not in a position to give a scientifically-biologically convincing answer to the fundamental question of the origin of new complex structures."[998]

Gonzalez & Richards: "When scientists read nature accurately, nature discloses itself in new and unanticipated ways, like a rich and multifaceted text to the patient interpreter. A proper reading creates new lines of research and exploration."[999]

Luskin: "Early scientists including Newton were *inspired* to their scientific research precisely because of their religious beliefs."[1000]

Lönnig: "Isaac Newton . . . wrote more about theological questions than about scientific questions (also in connection with scientific problems) and is nevertheless one of the greatest natural scientists of all time."[1001]

"The foundations of modern biology were laid by great minds who were completely convinced of the intelligent origin of life forms and highly motivated in their research, such as William Harvey, John Ray, Anthony van Leeuwenhoek, Robert Hooke, Linné, Cuvier, von Baer, Sedgwick, Owen, Agassiz, Pasteur, Mendel, Fabre and many others."[1002]

Hunter: "The evidence for design is overwhelming. Rather than rejecting the obvious, intelligent

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[996] Wolf-Ekkehard Lönnig, correspondence to Prof. V (pseudonym), 4 July 2001, published in *Ein paar offene Fragen der Evolutionstheorie sowie theologische Einwände von Evolutionstheoretikern zum Thema Intelligent Design*, https://www.weloennig.de/OffeneFragenEvol.html : accessed 17 November 2025. Quoted passage translated from German.

[997] Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution*, 10th anniversary ed. (New York: Free Press, 2006), 231.

[998] Wolf-Ekkehard Lönnig, *Reply to My Critics*, https://www.weloennig.de/Antwort_an_Kritiker.html : accessed 15 November 2025. Quoted passage translated from German.

[999] Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 1st ed. (Washington, DC: Regnery Publishing, 2004), 333.

[1000] Casey Luskin, "Cosmos Scrubs Religion's Positive Influence from the History of the Scientific Revolution," *Science and Culture Today*, 25 March 2014, https://scienceandculture.com/2014/03/cosmos_scrubs_r : accessed 11 November 2025.

[1001] Wolf-Ekkehard Lönnig, correspondence to Prof. D. (pseudonym) and Prof. C. (pseudonym), 6 September 1994, published in "9) Stellungnahme von Prof. D. (oder wie der Neodarwinismus die Wahrnehmung einfachster Tatbestände verhindert)," in *Johann Gregor Mendel: Warum seine Entdeckungen 35 (72) Jahre ignoriert wurden*, online edition, https://www.weloennig.de/Wahrnehmung.html : accessed 4 November 2025. Quoted passage translated from German.

[1002] Wolf-Ekkehard Lönnig, *Die Evolution der karnivoren Pflanzen: Was die Selektion nicht leisten kann – das Beispiel Utricularia (Wasserschlauch)*, 3rd improved edition (Münster: Verlagshaus Monsenstein und Vannerdat OHG, 2012), 118 [PDF p. 132]; digital file, https://www.weloennig.de/Utricularia2011Buch.pdf : accessed 9 December 2025. Quoted passage translated from German.

design recognizes the evidence and pursues explanations. No a priori assumptions are made about what solutions are and are not allowed. This is certainly not a science stopper. . . .

". . . We are beginning to see patterns for which naturalists would not think to look."[1003]

20.2.7 The Intellectual Verdict on Darwinism and Design

Johnson: "My sense is that the battle against the Darwinian mechanism has already been won at the intellectual level. . . .

". . . If the fall of Darwinism inspires materialists to develop a new theory that can survive unbiased scientific testing, then so be it. If they can't do that, then the world will face the astonishing truth that the evidence of biology actually *supports* the popular belief that living organisms are the product of an intelligent creator rather than a blind material force. "[1004]

Behe: "No matter whether new results and a new mechanical theory may come along in the future to explain what Darwin's theory couldn't (I very much doubt it), the current state of our knowledge intellectually justifies a firm conclusion of the intelligent design of life."[1005]

Remine: "While science is tentative, it is not flimsy. It can give results that warrant our confidence."[1006]

Dembski: "Darwin was like a magician performing far enough away from his subjects that he could dazzle them—until somebody starts handing out binoculars. Darwin's idea was a good trick while it lasted. But with advances in technology as well as the information and life sciences (especially molecular biology), the Darwinian magic gig is now up. It's time to lay aside the tricks—the smokescreens and the handwaving, the just-so stories and the stonewalling, the bluster and the bluffing—and to explain scientifically what people have known all along, namely, why you can't get design without a designer."[1007]

[1003] Cornelius G. Hunter, *Science's Blind Spot: The Unseen Religion of Scientific Naturalism* (Grand Rapids, MI: Brazos Press, 2007), 147.
[1004] Phillip E. Johnson, "The Wedge: Breaking the Modernist Monopoly on Science," *Access Research Network*, 1999, https://arn.org/docs/johnson/le_wedge.htm : accessed 26 December 2025.
[1005] Michael J. Behe, *A Mousetrap for Darwin: Michael J. Behe Answers His Critics*, Kindle edition (Seattle: Discovery Institute Press, 2020), 17. Page number reflects the Kindle edition mapped to ISBN 1936599910 and may not precisely align with the print version. For Kindle users, it's best to locate the quote using an exact search for the phrase "whether new"; for print readers, the page number provides approximate placement.
[1006] Walter James ReMine, *The Biotic Message: Evolution Versus Message Theory* (St. Paul, MN: St. Paul Science, 1993), 492.
[1007] William A. Dembski, *The Design Revolution: Answering the Toughest Questions about Intelligent Design* (Downers Grove, IL: InterVarsity Press, 2004), 263.

Appendix

Wolf-Ekkehard Lönnig

26 June and 2 July 2025

A Very Brief Note on Plato[1]

Britannica: "Plato (born 428/427 BCE, Athens, Greece—died 348/347, Athens) was an ancient Greek philosopher, student of Socrates (c. 470–399 BCE), teacher of Aristotle (384–322 BCE), and founder of the Academy. He is best known as the ***author of philosophical works of unparalleled influence*** and is one of the major figures of Classical antiquity."[2]

Several authors regularly presenting scientific articles at *Evolution News & Science Today*[3] on evolution, neo-Darwinism and intelligent design (as well as closely related factual subjects) have recently chosen to present a series of articles on the "immortality of the soul" – essentially following Plato's philosophy on this topic.

However, the ***enormous differences*** between Plato's ideas *versus* the teachings of early Hebrews and early Christians as found in the most widely distributed book of all times (the Bible: **Printing between 5 to 7 billion copies**[4]; **in 733 languages, and portions translated into over 3,700 languages**.[5] "These translations **impact billions of people around the world**, with 5.9 billion people having access to the full Bible"[6] and more billions of people through its translated portions) ***seem to be unknown to many readers*** believing so far that the teachings Plato and the Bible on the soul would be substantially congruent. They are definitely not.

To emphasize the **essential differences**, I am quoting some points from the Professor Anders Nygren's[7] Magnum Opus *AGAPE and EROS*[8] – Part I: A Study of the Christian Idea of Love. Part II: The History of the Christian Idea of Love (1953, altogether 764 pp.).

Anders Nygren, p. 224 (for his footnotes, see the original volume):

"When Plato speaks of the soul, the thought of the immortality of the soul is always present, Immortality is a natural endowment of the soul, which bespeaks its Divine origin. All that is required is that the soul should purify itself and set itself free from its bondage to sense in order to return to its Divine origin. *The Divine life of immortality is its normal condition.* ***This idea of the natural***

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[1] Comment by W.-E. L. (1 February 2026): For the Appendix, our anonymous author asked me for permission to add the following long quotation from one of my earlier documents, and I gave him my consent.

[2] **All emphasis here and in the following quotations by W.-E. L.** https://www.britannica.com/biography/Plato (retrieved 25 June 2025). There many more details. See perhaps also Plato summary https://www.britannica.com/summary/Plato and "soul summary" https://www.britannica.com/summary/soul-religion-and-philosophy

[3] https://evolutionnews.org/

[4] https://www.guinnessworldrecords.com/world-records/best-selling-book-of-non-fiction (Also retrieved 25 June 2025): "The best-selling book of all time is the Christian Bible. It is impossible to know exactly how many copies have been printed in the roughly 1,500 years since its contents were standardized, but research conducted by the British and Foreign Bible Society in 2021 suggests that the total number probably lies between 5 and 7 billion copies."

[5] "The Bible has been translated into a remarkable number of languages. As of recent reports, the full Bible is available in 733 languages, and portions of the Bible are available in thousands more. Specifically, at least ***some portion of the Bible has been translated into over 3,776 languages***." Übersicht mit AI (retrieved 25 June 2025), *Cf.* also https://en.wikipedia.org/wiki/Bible_translations

[6] AI? There is a range of similar statements when you google this topic.

[7] As for Anders Nygren, see https://en.wikipedia.org/wiki/Anders_Nygren ("Anders Theodor Samuel Nygren (15 November 1890 – 20 October 1978) was a Swedish Lutheran theologian. He was professor of systematic theology at Lund University…")

[8] The entire volume: https://archive.org/details/agapeanderosbyandersnygren/mode/2up

immortality of the soul is completely foreign to the Agape motif. Instead, we find a belief in the resurrection of the dead. In the course of history these two—belief in the immortality of the soul and belief in the resurrection of the dead—have constantly been blended together; ***yet in fact they belong to two opposite religious and ethical worlds***. Wherever the natural immortality of the soul becomes the fundamental religious dogma, we can be fairly certain that we are within the sphere of Eros. But where the Agape motif is dominant, it regularly expresses itself in belief in the resurrection of the dead. If participation in the eternal life of God is possible for man, **the possibility *is not based on any natural quality or endowment of man, but simply and solely on a mighty act of God***. *Just as it is God who makes the sinner righteous, so it is God who makes the dead to live. Resurrection is the signmanual of the Divine Agape*."

Nygren, pp. 280 -282:

"**The ancient Church differs most of all from Hellenism in its belief in Resurrection**. Christian tradition affirmed the ''Resurrection of the flesh," which the Apologists opposed to the Hellenistic doctrine of the "Immortality of the soul." The antithesis was conscious and intentional, for at no point so much as this was their opposition to the Hellenistic spirit felt by the early Christians. ***The Platonic, Hellenistic doctrine of the Immortality of the soul seemed to the Apologists a godless and blasphemous doctrine, which above all they must attack and destroy***. Their motto in this regard might well be Tatian's word: "**Not immortal, O Greeks, is the soul in itself, but mortal**. Yet it is possible for it not to die." The difference between Christian and non-Christian in this matter was so great that belief in the "Resurrection of the flesh" could become a shibboleth. One who believes in the "Immortality of the soul" shows thereby that he is not a Christian. As Justin says: "***If you have fallen in with some who are called Christians . . . and who say that there is no resurrection of the dead, but that their souls, when they die, are taken to heaven; do not imagine that they are Christians.***"[9]

The idea of the Immortality of the soul causes offence primarily because it is an expression of man's hybris (insolence) towards God. For Christian faith, salvation from death is a mighty act of God; in the Platonic, Hellenistic view, immortality is a native possession of the human soul. But such a doctrine, from the Christian point of view, is in line with the Fall; **it is man's attempt to make himself like God, to make himself God; it is an assault on God's divinity**. Instead of taking eternal life from God's hand as a gift of his unmerited Agape, man insists that ***he possesses it in his own right in virtue of the divine nature of the soul***. That is why the idea is godless and blasphemous; ***it implies the claim that the soul is akin to God, and itself a divine being***. Justin's polemic from this point of view against the Platonic position is especially interesting (Dial. iv. ff.). He first attacks the view that the soul[10] can attain the Vision of God on the ground of its kinship to Him and of the Eros that therefore dwells in it. No natural endowment and no Eros can deliver the soul from corruption. **If we consider merely its natural endowment, "it ought not to be called immortal."** But Justin does not mean that the soul must necessarily perish; he is simply attacking the doctrine of its ***natural immortality, the idea that its nature is such that it cannot perish***. This would mean the soul's emancipation from God, so that it would not be in every respect dependent upon Him; and against this Justin's theocentric conviction

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[9] Note by Professor František Vyskočil (1 July 2025): There is an AT response: "The quote is not a direct quotation …" "Relevant passage from *Dialogue with Trypho* (Chapter 80): "***They who maintain the wrong opinion say that there is no resurrection of the dead, and that when they die their souls are taken to heaven; do not imagine that they are Christians***." So: "The thought does come from Justin Martyr, but the commonly circulated quote is not verbatim from his writings. The actual source is: *Dialogue with Trypho*, chapter 80."

[10] I seems that here and in the following text (as paraphrased by Nygren) Justin's usage of the soul has already been somewhat influenced/touched by Plato's ideas of the soul in contrast to Genesis 2:7 ("And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man ***became a living soul***." – King James Version in agreement with all other translations that I have checked so far. Thus, man ***became*** a living soul, he ***did not get/receive/obtain a living soul***. This is in full agreement with the Apostle Paul citing this text at 1 Corinthians 15:45 ("The first man Adam man **became** a living soul" / "οὕτως καὶ γέγραπται, Ἐγένετο ὁ πρῶτος ἄνθρωπος Ἀδὰμ εἰς ψυχὴν ζῶσαν). Combine this, for instance, with Ezekiel 18:4 ("Look! All the souls—to me they belong. As the soul of the father so also the soul of the son—to me they belong. The soul who sins is the one who will die.")
See much more on the usage of the term "soul" at https://www.jw.org/en/library/books/Insight-on-the-Scriptures/Soul/ (also recommended below in the supplement). (Note added 2 July 2025.)

rebels. God alone is eternal and incorruptible. The human soul lives, not because it is life, as God, but because it has life, because God imparts life to it. ***Life does not belong to the soul as it belongs to God***. If man that dies does not remain in death, that ***can only be due to an act of the Divine will***. Here, in characteristic fashion, Justin combines the ideas of Creation and Resurrection; both bear witness to God's sovereign power. **As the soul did not exist from eternity, but was called into existence by the will of God, so its future destiny depends wholly on God's will**: so long as God wills that it shall live, it lives, and when God wills that its existence shall cease, then "the soul is no more, but it returns to the place from whence it was taken." To this sovereignty of God the Resurrection faith bears witness. When God through Christ awakens the dead to life on the Last Day, there can no longer be any doubt that eternal life is His gift. By setting the ***Resurrection faith over against the Hellenistic doctrine of the Immortality of the soul***, the Apologists maintained a position of the utmost importance for Christianity."

Nygren, p. 172:

"In his magnificent myth of Eros in the Phaedrus, Plato starts from the ***assumption common to the Oriental doctrines of salvation, that the human soul has a supernatural, divine origin and worth***. In a pre-existent state the soul has had a vision of the Ideas, or of that which is in itself true, beautiful and good; and this has made so deep an impression on it that even after it has fallen and become bound and fettered in the body "like an oyster in its shell"[11], it still retains a memory (ἀνάμνησις) of the glory of the world above, and feels an upward attraction which it often cannot itself understand. Just as the stone in virtue of its nature is attracted downwards, so the soul in virtue of its divine nature is attracted upwards; for everything in existence strives to find its own natural place."

W.-E. L. However, if the earth was designed for humans and humans for the earth – then this is our own natural place.

Nygren p. 210:

EROS
Eros is acquisitive desire and longing.
Eros is an upward movement.
Eros is man's way to God.
Eros is man's effort: it assumes that man's salvation is his own work.
Eros is egocentric love, a form of self-assertion of the highest, noblest, sublimest kind.
Eros seeks to gain its life, a life divine, immortalised.
Eros is the will to get and possess which depends on want and need.
Eros is primarily man's love; God is the object of Eros. Even when it is attributed to God, Eros is patterned on human love.
Eros is determined by the quality, the beauty and worth, of its object; it is not spontaneous, but evoked "motivated ".
Eros recognizes value in its object— and loves it

AGAPE
Agape is sacrificial giving.

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[11] W.-E. L.: In that case death could generally be viewed to be a liberation/relief/release from that situation of being 'bound and fettered in the body "like an oyster in its shell"' to gain a totally better life – so why do we normally like and want to live here on earth? Plato's idea of the immortal soul often appears to be **a very dangerous idea**: It has been used, for example, **to cheat/deceive/defraud millions of soldiers** in many (religious and non-religious) wars up to this very day. For example (2023): "**Fallen Russian soldiers would go directly to heaven**, said Moscow Patriarch Kirill" https://www.mdr.de/nachrichten/welt/osteuropa/politik/russland-orthodoxe-kirche-ukraine-krieg-102.html

Encyclopedia Britannica: "Among ancient peoples, both the **Egyptians and the Chinese** conceived of a dual soul. The **Egyptian** ka (breath) survived death but remained near the body, while the spiritual ba proceeded to the region of the dead. The **Chinese** distinguished between a lower, sensitive soul, which disappears with death, and a rational principle, the hun, which survives the grave and is the object of ancestor worship. *The early* ***Hebrews*** *apparently had a concept of the soul* ***but did not separate it from the body***, although later Jewish writers developed the idea of the soul further. **Biblical references to the soul are related to the concept of breath and establish *no distinction between the ethereal soul and the corporeal body*** [see link above in the Supplement]. Christian concepts of a body-soul **dichotomy *originated with the ancient Greeks* *and were introduced into Christian theology at an early date by St. Gregory of Nyssa*** [born ca. 335/350 CE] ***and by St. Augustine*** [born 13 November 354 CE]. https://www.britannica.com/topic/soul-religion-and-philosophy (Retrieved 26 June 2025). "***In Christianity, the conviction that God may offer physical immortality with the resurrection of the flesh at the end of time has traditionally been at the center of its beliefs***.[5][6][7]" https://en.wikipedia.org/wiki/Immortality (retrieved also 26 June 2025)

Agape comes down.
Agape is God's way to man.
Agape is God's grace: salvation is the work of Divine love.
Agape is unselfish love, it "seeketh not its own ", it gives itself away.
Agape lives the life of God, therefore dares to "lose it."
Agape is freedom in giving, which depends on wealth and plenty.
Agape is primarily God's love; God is Agape." Even when it is attributed to man. Agape is patterned on Divine love.
Agape is sovereign in relation to its object, and is directed to both the evil and the good"; it is spontaneous, "overflowing", "unmotivated"
Agape loves—and creates value in its object.

Supplement

So – coming back to the notes above on the enormous distribution of the Bible in billions of copies and thousands of languages – ***the question of what the Bible really teaches in detail*** on the topic of the soul has been answered, for example here:

(1) https://www.jw.org/en/library/books/Insight-on-the-Scriptures/Soul/
(2) https://www.jw.org/en/library/magazines/wp20150801/what-happens-after-death/
(3) https://www.jw.org/en/library/magazines/watchtower-no4-2017-july/what-does-the-bible-say-about-life-after-death/

Among other points, in (3) the *Jewish Encyclopedia* is cited that "The belief in the immortality of the soul came to the Jews from contact with Greek thought and ***chiefly through the philosophy of Plato***."

Interestingly the *Jewish Encyclopedia* continues as follows "…chiefly through the philosophy of Plato, ***its principal exponent, who was led to it through Orphic and Eleusinian mysteries in which Babylonian and Egyptian views were strangely blended***, as the Semitic name "Minos" (comp. "Minotaurus"), and the Egyptian "Rhadamanthys" ("Ra of Ament," "Ruler of Hades"; Naville, "La Litanie du Soleil," 1875, p. 13) with others, sufficiently prove."[12]

[12] Original quotation from https://www.jewishencyclopedia.com/articles/8092-immortality-of-the-soul