

Opening the Black Box

Throughout “Darwin’s Black Box”, Michael Behe makes the argument that Darwinian evolution can’t be used as a universal explanation for all of life, because it can’t account for irreducibly complex organisms. However, Behe also neglects to acknowledge any existing research that suggests otherwise. A study conducted at Michigan State University by scientist Richard Lenski has shown that there could be a scientific explanation for these seemingly irreducibly complex organism, and that Behe shouldn’t be so quick to point to a supernatural solution, or to call it quits so soon when his mousetrap breaks. While Behe may think he has all the answers, contrary research has shown there are other answers worth consideration.

Behe begins his argument by introducing the idea of organisms that are irreducibly complex, otherwise defined as a “single system composed of several well-matched, interacting parts that contribute to the basic function of the system, wherein the removal of any one of the parts causes the system to effectively cease functioning” (Darwin’s Black Box, 39). In order to demonstrate this principle, Behe raises the example of a mousetrap. He argues that if you remove one part of a mousetrap, it will cease to function, and because of this, all of the parts must have evolved simultaneously in order for a mousetrap to exist, therefor rendering it irreducibly complex.

However, is any of this really true? Besides the holes in Behe’s mousetrap argument, there also lies the fact that mousetraps are not living creatures and therefore are incapable of evolution. Second of all, it is possible to remove parts of a mousetrap and still have a reasonably functioning device. It may not be as efficient

as before, but will still function in a way that gets the job done. Furthermore, actual living creatures and not manmade devices are recognized for their ability to adapt. Should this mousetrap actually be a living organism capable of evolution and were one of its parts to be removed, it's extremely likely that the system could be worked in some way to compensate for the removed part. For example, let's say that the wooden base of the mousetrap was removed. The remaining mechanism could easily be attached to the floor, or some other surface in order to replace the base. While this is not nearly as efficient because the trap is no longer mobile, it is still a functioning system.

To further refute this mousetrap ideology, John H. McDonald from the Department of Biological Sciences at the University of Delaware argues, "the fact that one person can't imagine something doesn't mean it is impossible, it may just mean that the person has a limited imagination." Not only that, but he also proceeds to design a series of animations that demonstrate just how exactly a mousetrap is reducibly complex, and the ways in which parts can be removed. Unlike Behe, however, McDonald acknowledges the fact that a mousetrap can't actually evolve, and is only an analogy for the mechanism of evolution. McDonald also shows how, if you start with the simplest structure and work your way up to a more "irreducibly" complex one, it is possible to end up with a part that is at one point optional, but as the structure evolves and becomes more complex, becomes necessary in the more complex structure. However, this is not to say that the structure is now irreducibly complex, because it is still possible to modify the object back into its simplest form where this part is unnecessary.

Further studies conducted by scientist Richard Lenski at Michigan State University have also provided evidence against the concept of an irreducibly complex structure. Using a computer program called Avida, Lenski created digital organisms capable of self-replication, mutation, competition, and most of all, evolution. Lenski used this system to demonstrate how complex functions originate from random mutation and natural selection, and how they can arise from the evolution of simpler functions. Avida also conducted knockout experiments, in which you knock out components of a system one by one and see if it still maintains its structure and/or function (Lenski). Needless to say, this pokes quite a large hole in Behe's use of irreducibly complex organisms to argue for an intelligent designer.

Lenski's study also demonstrated that "the foundational role of simpler functions in the origin of more complex ones was evident in the overlap of the genetic networks underlying their expression" and that "complex features generally evolve by modifying existing structures and functions" (Lenski). Lenski is also careful to point out that while digital organisms are indeed different from actual organisms, the processes they go through are the same, and so the results can be trusted to account for actual living creatures as well. The information provided shows clearly how something structurally insignificant and evolve into a complex object, with no missing links or lost descendants to be accounted for. This data supports Darwin's theory of evolution, while simultaneously disproving much of Behe's idea of irreducible complexity. So much of Behe's theory stems on this crucial concept, but how can it be true in the face of so much contradictory evidence?

On the subject of Lenski's work, Behe has failed largely failed to address the subject, claiming that the study has "precious little biology in it" (Behe & Snoke). However, he fails to find the means to convincingly disprove the study, instead choosing to ignore it or manipulate it to suit his own means. In truth, much of what little he has said about Lenski's study suggest that he either didn't read the paper, or is intentionally or unintentionally misunderstanding it. He continues to insist that certain genes must have evolved and mutated at the same time, though there is countlessly little evidence to support these assertions. In fact, while Behe claims to be arguing in favor of intelligent design, much of what he says mirrors that of Creationistic ideologies.

Behe is also known for making assertions that are inarguably false, or at the very least not entirely true. In chapter 6 of "Darwin's Black Box", Behe tries to make the case that antibodies are irreducibly complex, because they cannot function without other antibodies. He claims that "Antibodies are like toy darts: they harm no one. Like a "Condemned" sign posted on an old house or an orange "X" painted on a tree to be removed, antibodies are only signals to other systems to destroy the marked object" (131-132). This is entirely untrue. In reality, antibodies can function on their own without a complementary antibody. All they need is another molecule to bind to – it doesn't necessarily have to be another antibody. In truth, antibodies are much more than a marker. They are an active component of the immune system. In addition to just marking, antibodies serve as neutralizers for toxins, and can also eradicate the function of certain viruses. These are certain functions that Behe didn't even bother to consider in his thorough analysis of the immune system.

Throughout "Darwin's Black Box," Behe makes countless assertions that he fails to back up with hard evidence. Instead, he reverts to a plethora of metaphors and analogies. Although these examples are successful in putting complex scientific ideas into accessible terminology, they fail to prove any point at all. Not only that, his iconic mousetrap example has been completely splintered by multiple scientists, all of whom have turned this supposedly irreducibly complex object into a reducibly complex one. In addition to this, Behe fails to even acknowledge studies that contradict his ideas, such as Richard Lenski's study that provides an explanation for irreducibly complex organisms. It is easy to see that there are gaping holes in Behe's theory, and indeed he fails to account for these many inconsistencies.