

LITERATURE REVIEWS

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THE ART OF MAKING OMELETS

Undeniable: How Biology Confirms Our Intuition That Life Is Designed. Douglas Axe. 2016. New York, NY: Harper One. 302 p. Softcover, \$16.99USD.

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Undeniable was certainly the foremost book advocating Intelligent Design (ID) published in 2016, steadily ranking in the top ten “Amazon Best Sellers” in the categories Creationism, Developmental Biology, and Organic Evolution. If a mousetrap was the key iconic illustration of Behe’s now classic ID book *Darwin’s Black Box*, omelets would be my pick for the most compelling image conveying the core message of *Undeniable*. The mousetrap helped explain how the irreducible complexity of biological systems, where all parts are simultaneously needed for the whole to work, was a hallmark of ID. In *Undeniable*, Axe makes a similar point by arguing that even simple tasks, like fixing an omelet, require a sequence of hierarchically organized steps that would never occur by chance alone in the whole universe in billions of years. Intelligent beings and their know-how are necessary to implement the highly improbable combination of steps that bring into existence functional things.

This principle fittingly applies to *Undeniable*, where the reasoning of a very intelligent being (Douglas Axe) becomes accessible to us through the careful arrangement of words on a written page. Indeed, the intellectual stature of its author is one of the incentives to read this book. Apart from graduating and doing research at such prestigious institutions as UC Berkeley, Caltech, and University of Cambridge, Axe has co-authored papers published in peer-reviewed journals such as *PNAS* and *Journal of Molecular Biology*. Therefore, in *Undeniable* we have the rare privilege of hearing a sympathetic argument for ID and God as Creator from an expert scientist who has actually worked and experimented with biomolecular systems in top-notch biology labs.

Axe's life in academia while holding onto convictions different than the standard evolutionary consensus is one of the four main threads that intertwine in the chapters of the book. When Axe shares the ostracism and rejection experienced when his convictions came under the scrutiny of his peers, we sense the suffering and emotional scars caused by discrimination, although Axe strives to be fair and detached in his recollections.

The second and major thread in the book is the apologetic dimension, where Axe builds logical arguments through the use of illustrations and carefully crafted propositions. The main ideas addressed with this systematic approach are: a) the basis for our innate ability to infer that something is designed and why this intuition is so powerful; b) the reason why natural selection cannot generate novelty in biological organisms; c) the reason why chance is also not a good candidate for the creation of biological complexity (this section includes an extended discussion of probability); d) the concept of functional coherence, defined as the precise arrangement and interrelation of the subcomponents of working systems. The points discussed are reinforced by summaries at the beginning of each chapter, boxes highlighting particularly important sentences, and simple but effective figures graphically representing aspects mentioned in the text.

The third thread revolves around Axe's specific field of expertise, the study of the structure of proteins and how changes in the sequence of amino acids that make them can affect the folding and consequent functionality of the proteins. Axe intersperses examples and results from his research throughout the book, in order to buttress his more general arguments about chance, natural selection, and design. His experiments seem to suggest that evolving new functions by random changes in the amino-acid chains of existing proteins is probabilistically highly unlikely, not to mention the astronomically low probability to get a functional protein from scratch. Evolutionary mechanisms (random mutation and selection) seem effective in optimizing functionality in pre-existing proteins (a process called selective optimization), but this is more analogous to the fine-tuning of a complex system than the construction of its subcomponents.

The fourth and final thread in Axe's book can be described as lyrical and exhortative. Especially in the final part of the book, Axe reaches out to the reader, openly sharing his faith in God and expressing his marvel and appreciation for the richness and beauty of life. Some passages using this register are very powerful and touching. I especially liked his description in chapter 14 of the human brain as a connecting point in the vast universe "between the immense realm of things and the infinite realm of thoughts.

[...] These connecting points are the places – the only places –where the world of atoms and the world of ideas are made to shake hands.”

Although the book is intended for a general readership and is full of effective analogies and illustrations (including the aforementioned omelets, but also alphabet soup, pool-cleaning robots, and the Apollo 13 mission), the writing is conceptually dense. Axe has a great ability to crystallize concepts with memorable language, making many passages of his book very “quotable.” However, some sections require a certain dose of concentration to follow the buildup of the argument through different chapters.

One subject where it would be interesting to have a deeper conversation with Axe is his opinion on the amount of change in created species. From what I could gather from the book, Axe seems to hold to a very high view of present diversity and animal behavior as divinely intended. For him, the saga of salmons being predated by orcas while embarking with determination in their journey to reach spawning waters perfectly fulfills God’s purpose and design.

In conclusion, I found *Undeniable* to be an honest, eloquent, sharp, and uncompromising critique of the evolutionary paradigm for the origin and diversification of life and a well-articulated presentation of the Intelligent Design argument. Axe and his candor will be inspiring for students and scholars alike, and I would especially recommend this book for college students who are struggling to understand how to incorporate scientific knowledge in a Christian worldview. Axe’s personal example of being a scientist who does excellent research while maintaining a positive Christian attitude and integrity of faith will act as a powerful encouragement in the life of many. I like to think that one day, our Creator and Designer will consider the fruits of this book and proudly say to Douglas Axe: “Well done, good and faithful servant; you were faithful over a few things, I will make you ruler over many things. Enter into the joy of your lord” (Matthew 25:21).