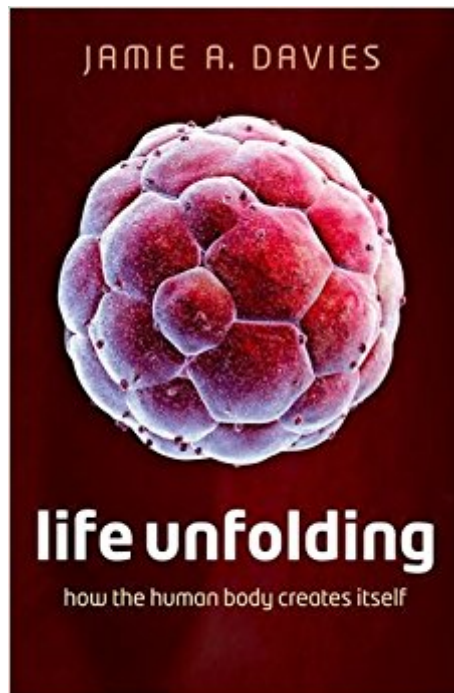




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Life Unfolding: How The Human Body Creates Itself



Synopsis

Where did I come from? Why do I have two arms but just one head? How is my left leg the same size as my right one? Why are the fingerprints of identical twins not identical? How did my brain learn to learn? Why must I die? Questions like these remain biology's deepest and most ancient challenges. They force us to confront a fundamental biological problem: how can something as large and complex as a human body organize itself from the simplicity of a fertilized egg? A convergence of ideas from embryology, genetics, physics, networks, and control theory has begun to provide real answers. Based on the central principle of 'adaptive self-organization', it explains how the interactions of many cells, and of the tiny molecular machines that run them, can organize tissue structures vastly larger than themselves, correcting errors as they go along and creating new layers of complexity where there were none before. Life Unfolding tells the story of human development from egg to adult, from this perspective, showing how our whole understanding of how we come to be has been transformed in recent years. Highlighting how embryological knowledge is being used to understand why bodies age and fail, Jamie A. Davies explores the profound and fascinating impacts of our newfound knowledge.

Book Information

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Customer Reviews

"From egg to adult body, Life Unfolding by Jamie Davies is a demanding but wonder-filled account of the simple interactions that create complex structures." -- Claire Ainsworth, New Scientist
"Davies offers a detailed ride through the mind-boggling number of simultaneous self-organizing activities of

growth." - Publishers Weekly

Jamie A. Davies, Professor of Experimental Anatomy, University of Edinburgh Since 1995, Jamie A. Davies has run his own laboratory at the University of Edinburgh, with a multi-disciplinary focus on discovering how mammalian organs construct themselves and how we can use this knowledge to build new tissues and organs for those in need. He has published around 90 research papers in the field of mammalian development, published a major specialist monograph (*Mechanisms of Morphogenesis*, Associated Press, 2005), and edited three multi-author books in the fields of development, stem cells, and tissue engineering. He is a Fellow of the Institute of Biologists, a Fellow of the Royal Society of Medicine, and a Fellow of the Higher Education Academy. He is also Editor-in-Chief of the journal, *Organogenesis*.

The material in this book, embryology or how we develop from a fertilized egg into what we are now, is fascinating but extremely complex. However, author Jamie A. Davies did a masterful job of simplifying the material. Davies did this in several ways, including an extensive glossary, over 80 illustrations, and descriptions of experiments (not graphic so don't worry about this). To his favour, Davies is very honest about what is known and what is conjecture. Davies used some humor and I felt that I got to know him a little. The only weak point of the book is that the complexity of the material means that some of the information may be inaccessible to a reader without some knowledge of biology. I strongly recommend this book to anyone interested in biology or science in general.

When we think of intelligence we think of what we see and what we do and why we do; this exploration deep within the intelligence of the cells of the human body makes pales anything we think our "rational minds" produce. I had no idea the depth, creativity and importance of how cells operate. This discussion is about our body but it is representative of the process in all of life and it is amazing.

Wow. I loved this book. A real "a ha!" moment doesn't come by every day-- one where you say, "wow. I totally get it. That's so NEAT!!", but I had a number of them reading this book, and it was kind of euphoric. I'm so glad Mr Davies undertook to explain this complex yet un-blueprinted undertaking at this level. The book is detailed enough to be mind-blowing and enlightning, but accessible enough to not require a professor, paid university credits, and a thick textbook. This

wasn't an easy balance to write, I'm sure, but Davies did an excellent job on a very worthwhile read. My daughter gets it next.

The reader should have at least a high school biology class to be able to comprehend the principles in this book. However, an intelligent reader these days can make progress in understanding if he/she is diligent and resourceful. The book is well worth the time someone can devote to understanding his/her world and the good science that is explained in this book. We are a lot closer to understanding life and how it creates itself than most people realize, if only they would prepare to comprehend basic science from the bottom up. I am still reading it and finding new understanding as I go along. For me, the disclosures of how the body increases and develops is a mystery solved and one I was always longing to know!

If you like me have only a cursory understanding how our bodies are assembled in the fetus by our cells in closed loop communication with each other, read "Life Unfolding". The Kindle version was well done. Subsequently I purchased a hard copy to pass on to my scientifically oriented high school grand-kids. It is amazing to learn with terminology nicely explained for the lay person just how living things are formed: bacteria, humans, and everything in between. Might read it again.

I thought I had a basic understanding of biology. Boy was I wrong! Fantastic book for any lay person. Doesn't get into the latest quantum research, but that's OK. Would have loved to find out why life at all? (Who wouldn't!). After all, stones don't reproduce, right?

Excellent read. To understand how a single cell egg and a tiny sperm can take a mere nine months and churn out a human being is mind boggling. All done without a master plan or, more significant, a master planer. Action and reaction cell upon cell. Chemical response with feedback loops and quality control reactions. I was fascinated from page one.

I think this is an absolutely fantastic book. It describes the building of a person starting right after fertilization. His explanations all along the way are very clear, concise, and understandable. What impressed me most, besides the excellent writing, is just how we could have evolved into such a complex structure, built up from one cell. To me the process is awe inspiring.

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