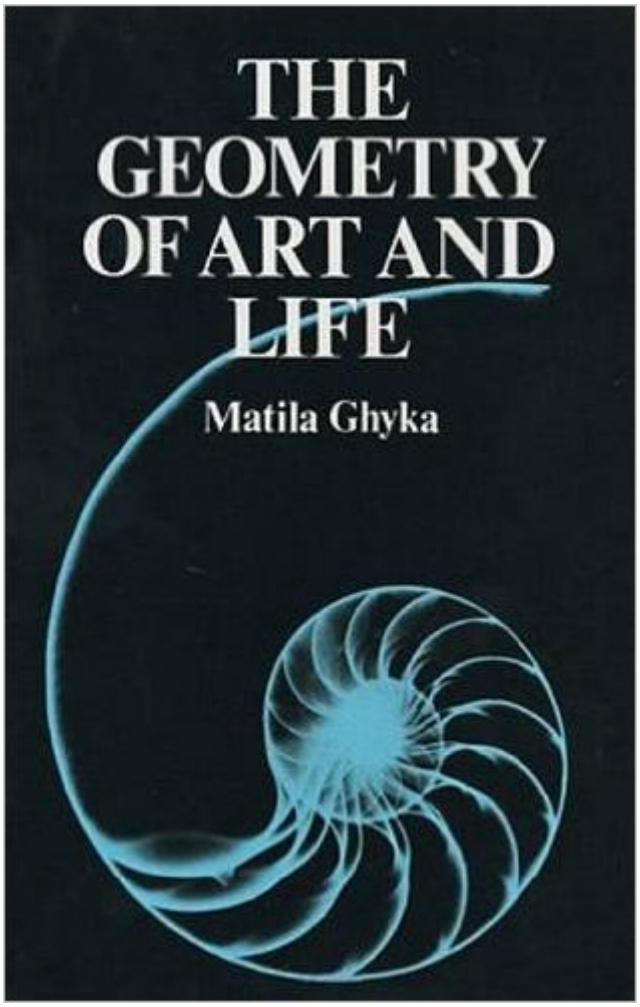
The Geometry Of Art And Life



Synopsis

Is everything chaos and chance, or is there order, harmony, and proportion in human life, nature, and the finest art? Can one find a natural aesthetic that corresponds to a universal order? If so, what importance can it have for the scientist, artist, or layman? What is the "true" significance of the triangle, rectangle, spiral, and other geometric shapes? These are but a few of the questions that Professor Matila Ghyka deals with in this fascinating book. The author believes that there are such things as "The Mathematics of Life" and "The Mathematics of Art," and that the two coincide. Using simple mathematical formulas, most as basic as Pythagoras' theorem and requiring only a very limited knowledge of mathematics, Professor Ghyka shows the fascinating relationships between geometry, aesthetics, nature, and the human body.Beginning with ideas from Plato, Pythagoras, Archimedes, Ockham, Kepler, and others, the author explores the outlines of an abstract science of space, which includes a theory of proportions, an examination of "the golden section," a study of regular and semi-regular polyhedral, and the interlinking of these various shapes and forms. He then traces the transmission of this spatial science through the Pythagorean tradition and neo-Pythagorism, Greek, and Gothic canons of proportion, the Kabbala, Masonic traditions and symbols, and modern applications in architecture, painting, and decorative art. When we judge a work of art, according to his formulation, we are making it conform to a pattern whose outline is laid down in simple geometrical figures; and it is the analysis of these figures both in art and nature that forms the core of Professor Ghyka's book. He also shows this geometry at work in living organisms. The ample illustrations and figures give concrete examples of the author's analysis: the Great Pyramid and tomb of Rameses IV, the Parthenon, Renaissance paintings and architecture, the work of Seurat, Le Corbusier, and flowers, shells, marine life, the human face, and much more.For the philosopher, scientist, archaeologist, art historian, biologist, poet, and artist as well as the general reader who wants to understand more about the fascinating properties of numbers and geometry, and their relationship to art and life, this is a thought-provoking book.

Book Information

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Customer Reviews

This excellent book, written in 1946, still remains in print, and for good reason. Ghyka shows mathematically that objects in nature are not randomly formed, but all have regularity and harmony.Beginning with the concepts of ratio and proportion in the plane, the Golden Section, and then to regular polygons and geometric shapes in 3 dimensions, Ghyka demonstrates these patterns with simple algebra and geometry, and plenty of diagrams.He explains the logarithmic spiral and its role in harmonious growth in nature, with photographs and diagrams. He shows how ancient builders used the Golden Section in their architecture and in their art. This book is a wonderful weaving of philosophy, mathematics and science, covering a lot of ground, and is very well-written. It is nothing like trying to wade through H.M.S. Coxeter! This book would be a fine companion to Cook’s "The Curves of Life," fleshing out the concepts presented there.This little book is a gem -- there is a tremendous amount of information packed into its 174 pages, yet it is understandable to the layperson. And it is aptly titled. It truly is about "The Geometry of Art and Life."If you are one of those observant persons who is looking for a more detailed understanding of the underlying patterns in nature, art and architecture, and you don’t mind spending a little time going through some simple algebra and geometry, this is the book for you.

Why are beautiful works of art beautiful? What makes a striking piece of architecture striking? Why is it we find such pleasure in admiring a flower, or a tree? Rather than addressing these questions from a subjective standpoint, Ghyka analyzes the mathematical geometry of classical art, architecture, and biology and attempts to find a common thread to bind them all together. It’s a wonderful mix of mathematics and history with a touch of philosophy to season it well. The math is simple, the sort of high-school geometry we’ve all had and forgotten, but it’s critical for the understanding of his argument. If you hate math, you’re probably not going to enjoy this book, but if you love art, and are willing to entertain an opinion as to _why_ you love it, I’d recommend suffering through it anyway - I’ve certainly developed a deeper appreciation of art and aesthetics in reading this book, and think it could be very valuable to serious (or not so serious) art lovers and artists.

I’m not a mathematician, but I still found this book to be readable. It is largely focused on the Golden Section (Phi) and related proportions, including Fibonacci numbers, sqrt(Phi), etc. The explanation of how to derive this number is clearly explained in the first few chapters. The following chapters show how Phi is related to most things we see everyday, including architecture, 5-point animals, crystal latticies, art, and music. This book is quite old, so the illustrations seem rather antiquated. Nonetheless, the quantity and clarity of these illustrations are impressive.The writing was clear, but the concepts were occasionally difficult to understand. The author made mention of "gnomic" growth a number of times without really giving a single clear definition. Also, I felt that a number of the tie-ins between Phi and architecture were a bit of a stretch. Most likely you could overlay any graph over a blueprint and see any proportion you’d want to see. At any rate, this book has gotten me interested in this subject, and I will be looking for more books on Phi.

I had a wonderful six months living with a student of St. John’s College in Santa Fe. The curriculum of this unique institution is purely of the classic Western canon of philosophy, mathematics, and literature. I was reminded of this when I read through The Geometry of Life because it addresses this vast world of mystery as understood before computers. Author Matila Ghyka is an often-quoted expert on the subject on the subject area, particularly for recognizing the Golden Section in the world around us.The Geometry of Art and Life is a genuine math book that is valuable for all sorts of thinkers, artists included. In the popular Dover reprint that I read, almost half of the 174-page book is dedicated to illustrative plates. Roughly a third of the book is full with formulas, equations, and tables that are easy to understand if you have been taught algebra and geometry.With respect to the "geometry of life", the book addresses the prevalence of such mathematical patterns in biological phenomena, but is one generation before the discovery of fractal dimension and non-linear self-similarity. The most significant portion of the "geometry of art" addresses the use of proportional canons in classical and gothic architecture, as rediscovered by modern scholars. Although you will learn more in The Painter’s Secret Geometry: A Study of Composition in Art, this book also details the conscious and unconscious applications of "symphonic symmetry" in art.All in all, this a book I shall not forget! It will change the way you see life and art, most definitely.

Ghyka leads the reader through the incredible diversity of the ever-present Golden Ratio in art, architecture, and biology. The 9 chapters are arranged in a kind of progression, covering these topics:1. Proportion, Rhythm, Architecture is â œfrozen musicâ •2. Golden Section (phi), esthetic

rectangles, Fibonacci series ratios3. Regular and Star polygons, Great Pyramid, Sublime Triangle4. Pythagorean solids, 13 Archimedian semi-regular solids, 4-d hypersolids5. Shapes that fill a plane or 3-d space, asymmetry and energy states6. Logarithmic spiral growth, lifeâ ™s pentagonal symmetry, human proportions7. Gothic Master Diagram, how masonâ ™s marks relate to phi diagrams8. Harmonic Analysis of some examples of Sculpture, Architecture, Painting9. Dynamic Symmetry and Cubism, Pointillism, FunctionalismOverall, the text is straightforward, the math is no more complex than high school courses, and the principles are illustrated with abundant photos. The hardest task for the reader is visualizing some of the complex diagrams, but one can skim or glance at the difficult ones and still follow the text.Although a few of the asides about least action and other principles appear to be outdated, there are several eternal insights. The one that impressed me most was his thorough explanation of 5 as the key to living organisms whose cellular growth is by â œintussusceptionâ • (from the inside outward) while 6 is the key to inorganic matter whose crystals grow by agglutination (additions to the outside of the structure).This book is a must-read for anyone who wants to understand how math links the human mind and the physical universe.

on Mathematics) Spacetime and Geometry: An Introduction to General Relativity