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Book Review

Scott Olsen

*The Golden Section:
Nature's Greatest Secret*

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The Secret Life of Phi

Nothing captivates the believer or draws the skeptic's ire like geometry's Golden Section. Scott Olsen's new work on the subject is no exception.

The author's exposition on mathematics' most famous proportion is contained within a compact and beautifully assembled volume, with dozens of visual images those familiar with the topic will recognize and welcome as old friends. He begins modestly, with the simple act of dividing a line into unequal parts such that the shorter part relates to the longer in the same way that the longer relates to the whole. The result is the ratio 1:*phi* ($1:\phi$ or $1:\sqrt{5}/2+1/2$ or 1:1.618034...), whose remarkable mathematical properties include the ability to grow at once by multiplication and simple addition.

Olsen's mission is to reveal how this simple act of division empowers individual parts to "retain a meaningful relationship to the whole," guiding spatial compositions, informing organic structures, and even illuminating the nature of consciousness. It's an ambitious agenda.

Phi plays out in pentagrams, triangles, spirals and rectangles of whirling squares. The human figure divides at the navel; fingers divide at the joints and the face into prominent features, all in Golden Section. Nature approximates the incommensurable *phi* in whole Fibonacci numbers, appearing in shells and plants, dominating phyllotactic ratios and approximating the ideal divergence angle of 137.5° ($360^\circ/\phi^2$), conducive to packing and exposure to light. Pussy willows, sunflowers and pinecones are among countless beneficiaries.

The Golden Section would seem to offer insight into practically every living being and crafted artifact, from microscopic DNA to the macrocosm's planetary orbits. Art and architecture through the ages—Chinese cities (Beijing's Forbidden City), Egyptian temples (Karnak), Greek pottery, Gothic cathedrals (Chartres), paintings of the masters (Leonardo's *Annunciation*), and the music of Bach, Bartok and Sibelius—owe much to this proportioning technique.

Olsen draws from ancient Pythagorean, Platonic and esoteric Christian thought to show how *phi* lies at the core of human consciousness. It's a daring assertion and his spiritual

commentary, which must be taken on faith, will not resonate with everyone. Who can say whether the Golden Section truly unlocks great secrets in the universe? But its value in creating unified compositions—not in every situation, certainly, but where appropriate—is there for all to see.

Skeptics will argue that *phi*, being geometrically exact, leaves no room for deviation that must inevitably accompany its transfer to the material world. But one employs the Golden Section to sustain quality throughout the whole, not for quantitative exactness. Of paramount importance is whether the proportion is consistently applied. It matters little that a golden rectangle graces the facade of the Parthenon or the outline of a credit card, no matter how precise. What matters is that it divides in similar fashion through part and whole, illuminating the maker's logic and intention, while enhancing the perception of harmony; such properties are its reasons for being.

Of course, what constitute acceptable levels of tolerance is worthy of debate. Certainly, care should be taken to avoid vague or arbitrary alignments, and some studies in Olsen's book meet this criterion better than others. Critics will justifiably question his analyses of plants and animals based on fabricated drawings instead of real specimens. And some studies neglect to trace the *phi* proportion through sufficient divisions to present a convincing argument. Given the controversy that surrounds this famous proportion, a more precise and thorough citation of sources than Olsen provides is warranted.

But if specific studies are lacking, the total presentation is compelling. Olsen succeeds admirably at imparting why the proportion continues to inspire, as we marvel at the vast diversity of the living world, and how it is governed by universal principle. The book's rich and evocative design, with its splendid illustrations, deserves special mention. We've seen these images countless time before, but here they are presented as if for the very first time.

Whether the Golden Section emerges from divine inspiration, natural law, as a construct of the mind or from deep psychological need, its impact is apparent. Olsen is to be commended for presenting his case in elegant fashion. There is much here to inspire. If he tends to preach to the converted, crediting the proportion with more than it deserves, his *Golden Section* is still a worthy addition to the perennial debate.

About the reviewer

Rachel Fletcher is contributing editor to the *Nexus Network Journal* for the Geometer's Angle column.