The Design Paradigm

Figure 3 of the article 'The Design Paradigm'[1] has the caption: 'The golden proportion is considered beautiful due to its description of a shell's spiral'. I disagree with this statement and the figure for the following reasons.

1. A shell's spiral is logarithmic but not necessarily a 'golden spiral'.[2]
2. A golden spiral is a particular type of logarithmic spiral.[3]
3. The construction of the spiral in the drawing superimposed over the shell image does not correspond to the usual depiction of the construction of a golden spiral:[4] the curves within each square are quarter circles with radius equal to the side of each square. This construction is an approximation of a golden spiral (figure 1).[5]
4. There is no apparent correlation between the drawing and the image of the shell except that they are both spirals.
5. The conclusion that the golden proportion is considered beautiful due to being related to a shell's spiral is not logical.

A more compelling example to back up the claims of Le Corbusier might have been a photo of a sunflower or some pine cones.[6]

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Janet Henriksen replies:

While to a mathematician a shell's spiral is a particular logarithmic spiral, and not necessary formed by the golden ratio, to an architect it is merely sufficient that a shell is *like* the Golden spiral. When we draw the golden spiral/ratio we do so with a compass, not with a continuously changing curve. The result *approximates* a shell section. Though it is not logical, the idea of the beauty and geometry of the shell is encapsulated in the best selling architectural book by Bachelard *The Poetics of Space*: 'Paul Valery lingered long over the ideal of a modeled carved object that would justify its absolute value by the beauty and solidity of its geometrical form.'[1] With no scientific or rational evidence, a website used by architects to develop drawing skills claims the golden rectangle is a 'natural proportion that's been used by many architects, artists, and mathematicians to design things of great aesthetic beauty.'[2]

Buildings are a delight because they are 'an imprint of the figural horseshoe'[3] or 'like the snake'[4]. Coated plywood used for concrete formwork, unfinished, is to some architects 'natural' but laminate is condemned as not natural. It is not logical, but it is a 'belief' that has resulted in formwork benchtops. There is a belief that timber looking cladding should be real timber and the eaves of a building should become finer like tree branches. All these ideas are based on a feeling about nature and what is natural. Beliefs about beauty, agreed to be the *subjective* component of design, are unlikely to be logical. It was precisely the point of the paper that society's beliefs, or world views, are not in logical agreement between two *rational, objective* fields of endeavour; that of science and architecture.

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References

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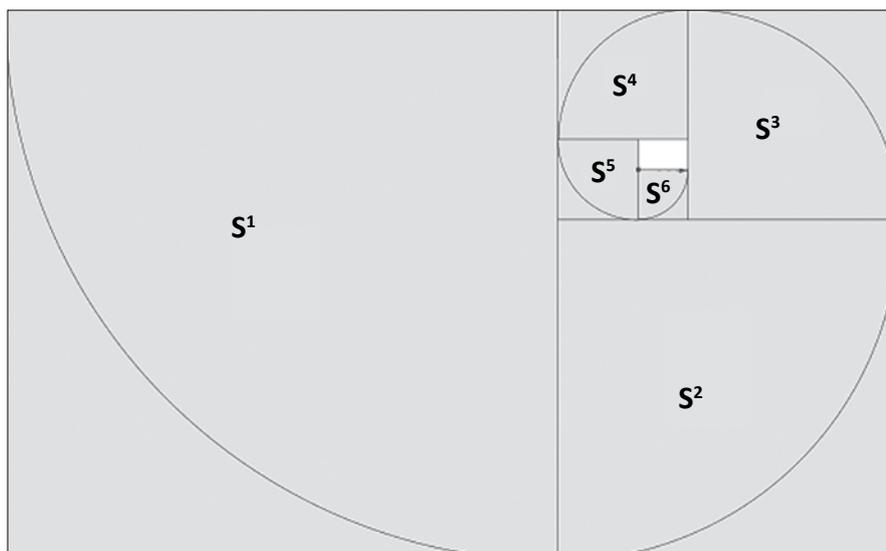
Figure 1. The construction of a spiral shell approximates a golden spiral.