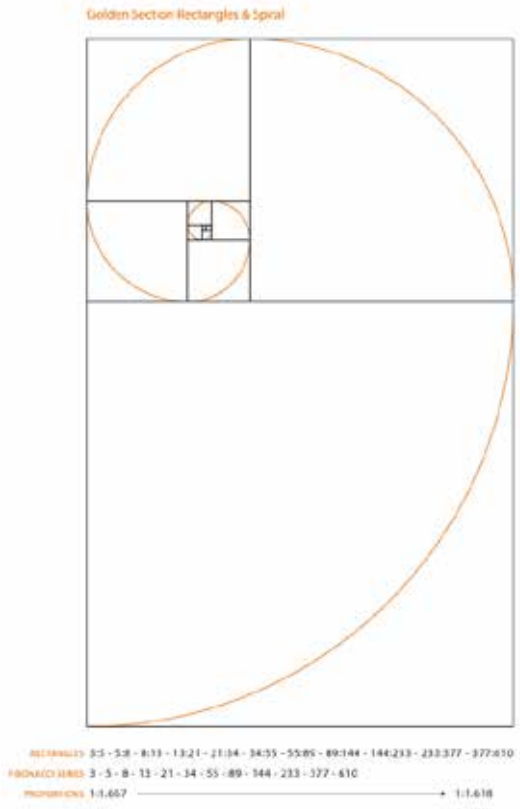
timeinspace
Missy Anapolsky

PROPORTION AND THE GOLDEN SECTION



Proportion is the comparison of dimensions or distribution of forms. It is the relationship in scale between one element and another, or between a whole object and one of its parts. Differing proportions within a composition can relate to different kinds of balance or symmetry, and can help establish visual weight and depth.

Divided space is perceived as a system of proportional relationships. Designers most often rely upon an innate sense of proportion. It is helpful to consider models that have been handed down over centuries.

The most familiar is the **GOLDEN SECTION**, which is a law of proportionality found frequently in nature, in the human body, and used throughout centuries in art, architecture, design, and music.

The Golden Section is basically a relationship or ratio between two numbers (or objects) wherein the ratio of the smaller number to the larger number is the same as the sum of both numbers. The algebraic expression of this relationship is a : b = b : (a+b). Stated numerically, the ratio is 1 : 1.618, and stated in percentages it is 38% to 62%. (note: The **RULE OF THIRDS** is a compositional tool that makes use of the notion that the most interesting compositions are those in which the primary element is off center. Basically, take any frame of reference and divide it into thirds placing the elements of the composition on the lines in between.)

The naturally occurring Golden Section proportion/ratio reoccurs throughout our lives. For instance, the proportion between the forearm and upper arm is 38% to 62% and the same ratio applies between the hand and forearm. Our own faces are comprised of this ratio time and time again; within the relationships between our eyes, ears, mouth and nose, the Golden Section can be found. Further (conscious or subconscious) recognition of the Golden Section in inanimate and artistic endeavours therefore feels ‘right’ to the eye and creates a feeling of satisfaction and harmony within an image.

The Golden Section ratio also shows up in the **FIBONACCI SERIES**. This is a sequence of numbers where each number is the sum of the two preceding numbers: 0 1 1 2 3 5 8 13… As the series grows, the ratio between the numbers approaches 1.61803398… (phi). The ratio of two successive numbers in this sequence is approximately equal to the Golden Section. The progressive series of mathematical relationships found in this sequence can be observed throughout nature, from sea shells and pinecones to the arrangement of seeds on flowering plants. And believe it or not, rabbits.

Hmmm…

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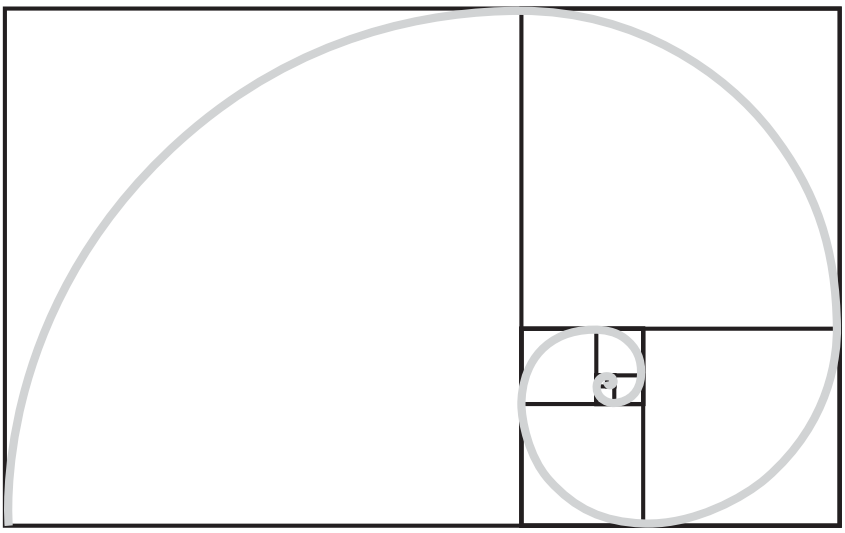
$\frac{a}{b} = \frac{a+b}{a} = \mathbf{1.618...}$

$\frac{61.77}{100} \,/\, \frac{38.22}{61.77} = \mathbf{1.618}$

GOLDEN SECTION
aka rectangle aka mean aka…



FIBONACCI SERIES
A tiling with squares whose side lengths are successive Fibonacci numbers