

Yin-Yang and Coexistence Theory

Yarco Wang

October 25, 2015

Abstract

Game theory¹ is discovered by John von Neumann, mainly focus on the relationships between competitors. This one is focusing on coexistence and inheritance, and try to explain some morals in several religions. And of cause, the theory itself is not limited to only religions.

I Introduction

Those concepts² are already known by human. But for better understanding our topic, there are more explanations. Those explanations are not strictly being proved, just some hints here. We suppose they are true.

I.1 Information

Information is a way to keep data – even when we are discussing, i'm spreading my thinkings, it only means, i'm trying to keep the data of my thinkings.

Suppose we only have one sense organ – the eyes, and suppose the world has only one color – white, there's no way to keep the information by color and recognized by eyes. That is:

Information can be kept and saved only because there exist relative things. (I)

Normally, this is the relative of colors in real world and 1/0 in electronic world.

¹Game theory is “the study of mathematical models of conflict and cooperation between intelligent rational decision-makers.” – wikipedia

²The concepts of “information”, “inheritance”, “golden section” in section one “Introduction”

1.2 Inheritance

The first target of each animal in the world is for living longer, but death is absolute. To keep staying in the world, we choose inheritance in some way. And in perfect situation, our children should have the same DNA as we have. DNA is the information describe us. So, the conclusion:

Inheritance is a way of keeping and saving informations. (2)

1.3 Golden Section

Golden section³ is very well known and is discovered by a lot of people. But it seems no one really explain it. Let's just put the definition here⁴ first:

$$\phi \stackrel{def}{=} \frac{a}{b} = \frac{a+b}{a} = \frac{1+\sqrt{5}}{2}, (a > b > 0)$$

We focus on its reciprocal $1/\phi$. We get:

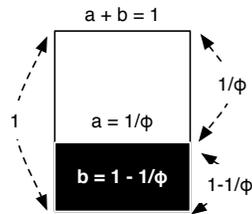
$$1/\phi = \frac{a}{a+b} = \frac{2}{1+\sqrt{5}} = \frac{\sqrt{5}-1}{2} \quad (3)$$

As we know according to $a/(a+b)$, that is just the ratio of the biggest part a comparing to the sum of a and b .

When composing the two conclusions (1) and (2) above, we get the true meaning of "Golden Section":

Golden section is the perfect way on doing inheritance. (4)

To make it more sensitive, here is the chart both in areas and line segments (suppose $a+b=1$).



(5)

³Golden section is also known as "Golden ratio" and "Golden mean" – wikipedia

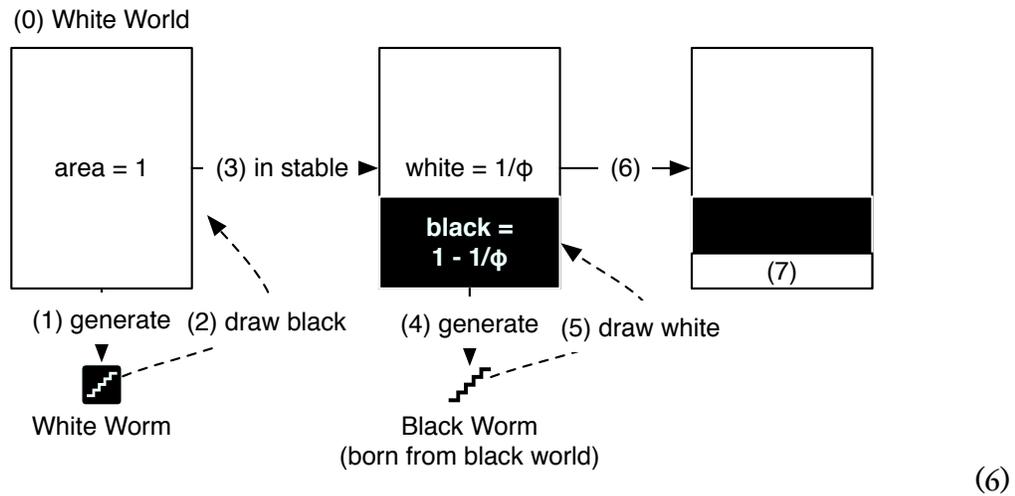
⁴Also from wikipedia, sorry...but you know, i'm not just copy and paste.

2 Yin-Yang's worlds

Now we have the conclusion on “golden section”, it is actually static. But in real world, the inheritance is not just from $1/a \rightarrow a/b$, it is endless in inheritance. Also we need to add more assumptions to illustrate the world and for sensitive it is a block of area in (5) (not the line segment):

1. World: the worlds has two types, either *white* or *black*. Each world can generate one worm which has the same color of the world.
2. Worm: worms can draw the opposite color⁵ in the world and also can remove the color they drew. The worms are always perfect in drawing but lazy⁶.

At the very beginning, we put a *white* world of area 1, and then here is the result charts (numbers in the parentheses are the sequences):



White area (7) here is equal to $(1 - 1/\phi)^2$, but because the whole process is still going on, the area we can calculate is actually $(1 - 1/\phi)^2 \cdot \phi$, the rest part is going on and in endless processing. It is actually a geometric progression, here we want the final area of *white* color:

$$S_n = 1/\phi + (1 - 1/\phi)^2 \cdot 1/\phi + \dots + (1 - 1/\phi)^{2n} \cdot 1/\phi \quad (7)$$

⁵It means nothing if the color is the same as the world.

⁶It means the worm tries to draw the color in golden section and keep the color less used, after reach the golden section it stops – no need the big part of a in $a + b$.

And because it is infinite and $(1 - 1/\phi)^2$ is obviously less than 1⁷. The sum is:

$$S = \frac{1/\phi}{1 - (1 - 1/\phi)^2} = \frac{1}{2 - 1/\phi} \quad (8)$$

After we put the value we get in formula (3), we have the final result:

$$S = \frac{2}{5 - \sqrt{5}} = \frac{5 + \sqrt{5}}{10} = 0.7236 \dots \approx 72.36\% \quad (9)$$

Basically, that is the ratio for those have inheritance feature keeping balance between *Yin - White* and *Yang - Black* in a summary view.

3 Discussion

The theory itself is self explained: I can not listing or explain whole of it, cause there will always be *Black* area. Below are discussions may not strictly being proved, so let's come from Chaos, and end in Chaos.

3.1 The Ratio of Water in Human Body

Things we know:

- In Chinese mythology, a goddess *Nurwa* created human by mixing water and soil;
- In Bible, “*And God said, Let us make man in our image, after our likeness: and let them have dominion over...*”⁸;
- In Bible, “*But there went up a mist from the earth, and watered the whole face of the ground.⁹ And the LORD God formed man of the dust of the ground, and breathed into his nostrils the breath of life...*”¹⁰;
- When talking about the origin of life, in modern science, it would say, life comes from ocean.

According to the above, we had some conclusion:

⁷See more about the sum formula for geometric progression

⁸Bible - Genesis - Chapter 1 - 1:26

⁹Bible - Genesis - Chapter 1 - 2:6

¹⁰Bible - Genesis - Chapter 2 - 2:7

- Human is made up by “water” and “soil – other materials”¹¹. “Water” has a big ratio in human body
- Human is created by following god’s image
- Human is something special when comparing to other animals

Suppose *water* as *white world* in our Yin-Yang worlds mode and *soil* as *Black*. According the value we get from formula (9), we could say the perfect way of following god’s image among different animals should have the $ratio_{water/body}$ approaching 72.36%.

3.2 Others meaningful ideas

- The concept of Reincarnation in Buddhism
- Karma in Buddhism
- Profit and non-profit in a company
- What happened when illegal people entered a country
- ...

3.3 More Discussions in Yin-Yang’s Worlds

- What about if it requires time on generating worms and worms have limited life?
- If there’s another black area with of 1 and has conflicts with white area?
- *Black* area = $1 - 72.36\% = 27.63\% + 0.01\%$, let’s ignore 0.01%, any reason on $72 \rightarrow 27$ and $36 \rightarrow 63$?
- ...

¹¹Though in bible, there’s no clear text saying that, but according to “mist from the earth”, we could know the “dust of the ground” is not pure soil.