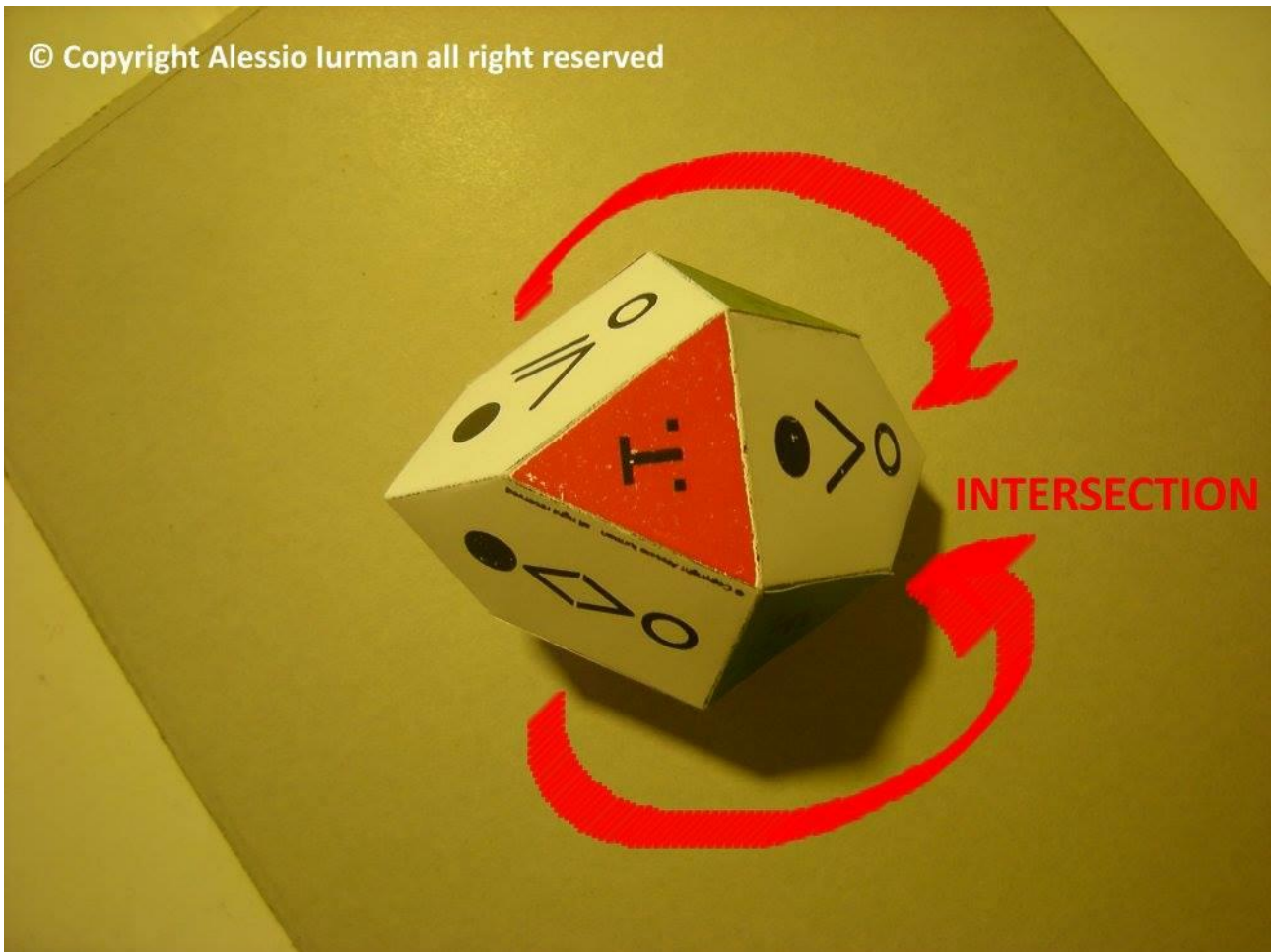


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The collapse of reality: akasha, cuBit and the layers of truth

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1) Introduction

Were an Asiatic to ask me for a definition of Europe, I should be forced to answer him:

It is that part of the world which is haunted by the incredible delusion that man was created out of nothing, and that his present birth is his first entrance into life.

(Arthur Schopenhauer, "Coming back", by Shрила Prabhupada)

As a student of Alchemy I would like to dedicate this short essay to my teachers. I have started to think that learning alchemy for a better aim means to move awareness and consciousness from myself for a better knowledge and discovering there is a lot to do ... I believe in the intelligence of the heart, where the soul meets the present reality

And his Soul that was within him called out to him and said, 'Lo! I have dwelt with thee for all these years, and have been thy servant. Send me not away from thee now, for what evil have I done thee?'

And the young Fisherman laughed. 'Thou has done me no evil, but I have no need of thee,' he answered. 'The world is wide, and there is Heaven also, and Hell, and that dim twilight house that lies between. Go wherever thou wilt, but trouble me not, for my love is calling to me.'

(The Fisherman and his soul, Oscar Wilde)

I hope you will enjoy the text where I voluntarily mix science and art in a poetical way to reach the inner alchemical content for all the readers!

N.B.Kanzian

2) cuBit configuration

The visitor will be convinced that are other and better things even in this life
(Lord Byron)

cuBit is an experimental logic abacus. It has been invented by Alessio Iurman who created it many years ago and since 2015 it has been exhibited in the Natural Science Museum of Trieste (Via Tominz n.4 in Trieste Italy). cuBit has a similar shape to an irregular dodecahedron or cuboctahedron but where opposite 'vertici' of cube remain (the platonic solid of dodecahedron philosophically represents the element of ether). It can be manipulated like Rubik cube, and it is a game between the problem solving of logic and psycho-geometry. It can be useful because it reinforces us to understand the incompleteness of binary logic and geometrical illusion.

According to the principle of reality for cuBit one thing is true now and here and other things are false in another level. We are going to explain why it uses binary logic to show that there are things placed in layers of reality (let's say another dimension). This kind of representation is understanding the shapes and the thought for an ecological mind, because we do not want to lose matter, but save it to transform it and spend it in the right amount that we need.

cuBit is a contraction of the words "cube" and "bit" (binary cipher) and here are its technical strengths:

- 12 faces
- 5 symbols $< = >$, $> = <$, $>$, $<$, $=$
- 2 colors (red and green)
- 2 values (false and true)

Further you can see some pictures and it will be clearer... It is an irregular polyhedron and it is possible to play it alone, by a single man, or with another person: attention, it provokes addiction!

The cuBit is a complex invention based on computer logics whose function is to demonstrate how these machines "think". It was created by Alessio Iurman, a 71 year old man born in Trieste in 1944 who has spent all his life in this beautiful city, that was once part of the Austro-Hungarian Empire and that lays in north-east Italy, at a close distance from Slovenia, Croatia and Austria. His main love was always informatics, and he could give way to his passion by entering the University of Trieste around the year 1968, where he worked as a software designer for nothing less than 45 years.

Mathematical logic has been recently perfected in a strict "calculus system" and basically by A. De Morgan and G. Boole. The so called "logical system" helps us in deductive way, for instance: if this thing is true then other things are false ... Intuitive deduction is very well known, rather mathematical deduction (implication) analyzes extensions and its applications. As arithmetic helps our quantitative knowledge, geometry helps among images and forms, so logical rules help us for the thoughts.

The two De Morgan's laws are at least as important as the properties of arithmetic operations, such as distributive law, but not nearly popular. They are worth in the operations of set theory as in the logical calculus. The first, in its logical rendering, say that: the NEGATION of the LOGICAL PRODUCT (the OR) of two proposal, is the same of the LOGICAL SUM (the AND) of the NEGATION of the one, and the NEGATION of the other. At the beginning the order is not important to build meanings then it becomes basic to build a structure like a complex net (but we will not go in the deep of this topic here).

The first, in its logical rendering, say that: the NEGATION of the LOGICAL SUM (the AND) of two proposal, is the same of the LOGICAL PRODUCT (the OR) of the NEGATION of the one, and the NEGATION of the other (same way, the order is not important). Then, a bunch of ours reasoning are "outlaw". In set theory, the second law say so: the COMPLEMENT of the UNION of set A and set B is the same of the INTERSECTION between the COMPLEMENT of A and the COMPLEMENT of B. It is simple, now, to tell the second...

The cuBit abacum: cuBit is a "thing" crated to explain some logical (better, "digital logic") and set-theoretical concepts, as a "game". From march 2015, cuBit is exposed in the Natural History Museum in Trieste (Italy). Please visit:

<http://www.museostorianaturaletrieste.it/appuntamento-domenica-9-agosto-ore-1000-mattinate-giocaosserva/>

Let's describe cuBit more in the detail: it is a polyhedron width 12 sides, obtained from a cube width 6 of his eight vertices truncated. 6 of the sides of cuBit are equilateral triangles, 6 others are pentagons, obviously not regular. Each of the pentagonal sides of cuBit shows one of that 6 relationships defined in "digital logic": white < black; white = black; white > black; white => black; white <> black; white <= black, but the rule is that the opposite relationship must lie on opposite sides. Obviously, "white" and "black" are the terms of a couple Cartesian, and, in the cuBit, they are, graphically, a white, and a black disk.

The De Morgan's laws in the cuBit it can be practically experienced. In the cuBit, we can observe 6 group of 3 sides (and then 3 set/logical relations), each grop adjacent to one of the triangular sides. Well, if the color of the triangular side is red, then we can read a set intersection between two of them, into the third one (see fig. 1a, 2a, 3a). Instead, if the side is green, we can read a set union (see fig. 1b, 2b, 3b). But, for example, we are looking anyone of the "union" tern (green), the opposite "red" tern show just THE INTERSECTION OF THEIR COMPLEMENTS, so as the first De Morgan law says. The reverse proceeding, from a "red" tern to the opposite green, show the rule of the second De Morgan's law (fig. 1c, 2c). So that, the cuBit is an "abacum" for some basic rules in "digital logic".

Alessio Iurman's eMail iurman@units.it is the owner of all rights on cuBit, cuBit puzzles, cu3it card game and videogame. Figures are © Copyright by Alessio Iurman all right reserved.

3) The Ether around us

The concept of ether has different meanings, according to the author and his theories. For instance Einstein used the concept of ether for several reasons in his general relativity theory: '... the ether is not against the relativity concept ...' (1916). Personally I believe that every well educated mind should read and teach the book by Ludwig Kostro 'Einstein and the ether', because it changes our perception of physics in the XX^o century in a very dramatic way.

I wrote an alchemical poem to celebrate the powerful and divine energy of the ether:

Ether's echo

*I speak to myself
ether's, the eternal echo
like to a hidden name.
There's a clear essence of the soul
and I want to display its density world.*

*My relief starts from heaven ...
but the cloudy present
and the shadowly thought
live inside me and
and it reveals Its rough.*

*How from a Real quantity
I see everything matters.
For me it's more than joy
fool - and more than a poisoned mind
it is an echo-mind
so how can I interact with?*

*The matter forgets
the matter is alive,
and it eats our time
like an experienced spirit soul
for a smiling reflex of better thoughts ...*

*From the sparced sandly sky
we still remain,
delights full of darkness,
in a curved horizont;
stay - but not in vain.*

(N.B.Kanzian, June 2015)

The aither or ether comes from the word 'aidh', that means 'fire that burn intensively'. For Plato and Aristotle it was the fifth element and for stoics the 'pneuma'. Aristotle thought the void did not exist and that the nature hated the void; on the contrary the atomists thought it existed (Lucretio, De Rerum Natura, Book I).

It has been reported in the history of physics that in the 1916 Einstein took back the concept of ether after denying it till 1905.

4) Who's afraid of differences? The weed and other growing plants

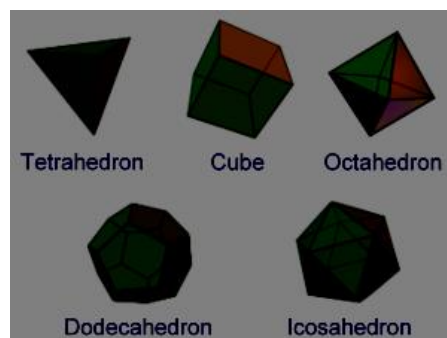
Major and minor and $<$, $>$ are not torture instruments for teachers in the school, but tools of clearer logical understanding. Why logic is so important? Basically it helps to reconnect reality with the Self and it can help also with the scientific knowledge and in the everyday communication relationships. A. Iurman was working in the "Data Processing Center" of the University of Trieste, and began to learn the principles of logical calculus and mathematics order: "I thought those concepts important and useful at least as much as the arithmetic, but normally are not taught ... I also thought computer and computer science to be too many complicated and too many 'large' ... and too far away from people life, to serve the purpose. ... Then I began to search for a way to teach them by some kind of game".

He noticed that a cube is the ideal shape for mapping some usual tables, and the cube is a conceptual game very popular and handy. Then he followed this path, until he realized the cuBit shape in his current form. The basic of cuBit are here: take any two numbers, first can be less than second, or first equal to second, or first greater than second. Well, one, and one only of these three statements must be TRUE, and necessarily the two others FALSE; here, we can find the first logical operation of negation, and negation is the complementary part of any statement. cuBit show on its three contiguous faces the three principal statements and each opposite face show the three complementary statement. So now we can see in the form of cuBit the logic rules for LOGICAL NEGATION, LOGICAL SUM (AND), and LOGICAL MULTIPLICATION (OR). In fact there is also a videogame, cu3bit, that helps to understand the cuBit configuration and it is similar to a cards game ... however major and minor are useful to great a group, a structure or a series or a succession where infinite is the last number. Cantor said we can compare different number of infinity ...

5) Platonic solids

A Platonic solid is a perfect geometrical figure or polyhedron in three dimensions that had its origin in the ancient Greece and that was named after one of the most influential philosophers of all time, Plato. Actually, the word polyhedron also comes from this language: poly (many) + hedron (base or seat). They all have in common several features, which are: they are regular, symmetrical and also convex; that is, if we take two random points inside the polyhedron and join them by a line, this line should be within the geometrical figure, but not outside. Their faces must also have the same shape and size, and the same number of faces must meet in each vertex. Furthermore, exact geometric proof has been put forward to exemplify the brilliancy of the discovery. Only five elements follow this pattern, and they receive a name according to the number of faces they have. They are: tetrahedron, cube, octahedron, dodecahedron and icosahedron.

Mathematicians and geometers have studied these five elements for thousands of years since the time of the ancient Greeks, deepening into their nature or simply for aesthetic pleasure. Although their discovery was attributed to other Plato's contemporaries, such as Pythagoras, Euclid or Thetaeteus, it was Plato who wrote about them more extensively. He even compared the five solids to the classical elements: the tetrahedron represents the fire, because its heat is sharp; the cube, the one that seems less as a sphere, represents the earth; the tiny elements of air are seen in an octahedron; and the icosahedron, because it is too complex to fit into one's hands, is compared to water. Finally, Aristotle added a fifth element, ether, which heavens are made of, comparing it to the dodecahedron. These five Platonic solids have been a matter of investigation in many different fields, such as science or technology, and they are a great example of the wonderful legacy that the ancient Greeks passed onto us.



Conclusion

Through cuBit is an 'extra platonic solid' and we can learn more on the process of 'identity' and 'difference' from it. There is an ontological meaning that shows us the personal view by playing it and beyond cuBit. We would like to create an echo-logical-mind to give such contribution that creates a maturer understanding of reality, developing a proper attitude towards multidimensional complexity. CuBit is a "logical object", a solid cube that stands between the platonic regular esaedro (cube) and the cubottaedro by Archimede (made by eight triangle and six squares). It can be used like an "abacus" to learn binary logic and its limits. In fact it should be clear that one object can have only one place, and there is only one place for an object (picture below shows cuBit on a cube, but cuBit can be placed inside a cube).

One research question is: are operations objects? To answer firstly we can say that cuBit places in evidence limits of logical operations definitions ... we have three elements in our real world: subject, element/s (or objects) and relationship/s. For cuBit reality is understood by the subject like a non homogeneous variation between object and relationship.

In science, so we have been taught, we measured and weigh things in quantity. But relationships between different values should be mapped for a better eco-friendly system, where matter and substance are in balance and well organized for the quality of the soul. The context could be used by the subject like an object or a kind of relationship, but the simplest contest in mathematic is the so called 'insieme'.

The cuBit form is esthetically destructuring reality, because the subject wants to investigate on something, wants to be the subject who needs to create his own reality and representation as a personal map of understanding. More than one question remain open, it will be discussed in further essays: what is the meaning of order? What is a cycle and what is identity? In this short essay we have just given you a glimpse ...



cuBit on a cube

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