Empiricism and empirical information

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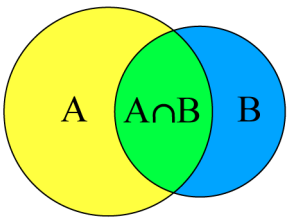
Modern physics is empiric science and it is beyond doubt that it is extremely successful. Physicists have discovered the constituents of matter and the relations between the distinct phenomena. However, the ambition of physicists is not only to discover all the distinct phenomena and their mutual interactions, physicists want to find out the origin of the existence of our universe too. It is even hoped by some physicists that the Theory of everything can explain the cause behind the physics laws and the universal physical constants. In spite of the research all over the world during nearly a century, there is still no accepted Theory of everything in physics. That's quite worrying so it raises a question about the suitability of the empiric method to search for the Theory of everything.

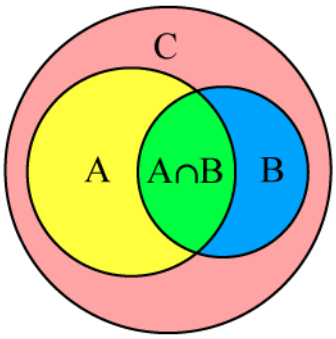
Experiments

What are physicists doing when they observe the properties and mutual interactions of the phenomena in the universe?

Phenomenological reality is like a mathematical set, so we can represent phenomena with the help of a Venn-diagram (figure below). Set A and set B have properties in common and this is represented by the intersection (A∩B). That is why the intersection between set A and set B represents the measurement.

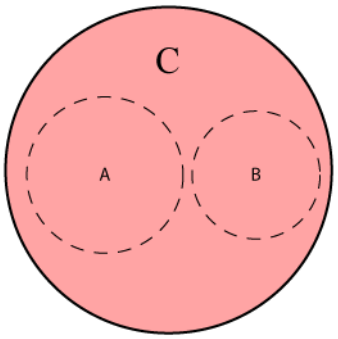


Unfortunately, the search for the theory of everything is not the search for the relations between phenomena at the lowest scale (elementary particles and force fields). It is the search for the "hidden" reality that creates all the distinct phenomena in the universe. It is the search for the not composed properties that create the composed set A and composed set B. Be



cause set A and set B are part of an all-inclusive set that envelopes everything in the universe: set C. Therefore, the second Venn-diagram looks nice but it is a *wrong* representation of reality. It merges the phenomenological view – set A and set B – with the all-inclusive view: set C.

Phenomenon A and B emerge from set C (image below). The absence of the intersection A∩B in relation to the existence of set C proofs the uselessness of the results of measurements when physicists try to find the Theory of everything.



This simple model shows the limitations of empiricism if we search for the Theory of everything. Because it is impossible to deduce the properties of set C with the help of subsets (composed properties of set C). The result will always be a limited model, a simplification of reality.

The solution to by-pass these problems is simple. Research in the field of the underlying reality of the creating quantum fields (TOE) must not focus upon the observed properties of the phenomena but on the general properties that are observable everywhere in

the universe (set C). Moreover, the description must be done with the help of correlated mathematics.

Phenomenological information

Observing is incorporating information. Actually, information is the representation of everything that exists. Unfortunately, we cannot observe all that exist because with our senses and instruments we measure only differences between phenomena. All that is equal in every point in the universe will remain undetected.

Unfortunately, all the information we have obtained originates from observation; personal observations or observations by others. We interpret the information and create a conceptual model but there is not only one interpretation so there is not one hypothetical model too.

How do we determine the correctness of our model?

The right model – the all inclusive concept – makes it possible to derive the universal properties of set C, the universe. Actually, universal properties are not limited to a specific category of phenomena, like set A and set B. Universal properties are existent everywhere in the universe at every level of reality so we can derive their nature.

Some observations of universal properties are:

a. The uniform structure of space and time.
b. The existence of field properties everywhere.
c. The continuous changing of all the phenomena.
d. The existence of zero point energy.
e. The non-local nature of the universe.
f. The existence of uniform proportions.
g. The law of energy conservation.
h. The constant speed of light.
i. The existence of Planck's constant.
j. The uncertainty principle of Heisenberg.
k. The equivalence of mass and energy

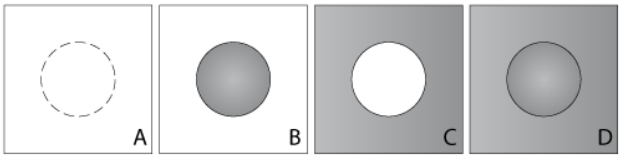
Phenomenological interpretation

The ancient Greek philosopher Parmenides reasoned that "*nothing*" don't exist and all the phenomena are created by an "*underlying reality*".[1]

Unfortunately, empiric science is unwilling to determine the correctness of concepts if there is no experiment that proves the hypothesis.
But how can we set up experiments that prove Parmenides concepts? It is impossible to examine the whole universe and the existence of an underlying reality isn't detectable by experiments, like the intersection of set A and set B.

Actually, Parmenides used other terms to describe the existence of set C. Like other philosophers – Leucippus and Democritus – probably meant that the underlying creating reality or the phenomena must have a universal non-destructive structure, and used the term "*atoms*" to describe the universal property (f).[1]

Fortunately it is easy to show the reliability of these concepts because the possibilities to describe reality are quite limited.



The 4 images above (A, B, C and D) show all the possibilities to describe the nature of our universe. The circle/sphere represent all the phenomena and the back ground represent the surroundings of the phenomena. The grey colour indicates reality, the existence of a creating origin.

- Possibility A denies reality. The phenomena and the surroundings of the phenomena don't represent a creating reality. At least both are not part of it.
- Possibility B shows phenomenological reality. Phenomena have properties or their own and these properties create reality.
- Possibility C isn't part of our scientific culture at the moment because we cannot imagine the existence of properties without the existence of phenomena.
- Possibility D envelopes A, B and C so we have to accept that there is no difference between the object and the surroundings of the object.

The main concept of quantum field theory – phenomena are created by the underlying basic quantum fields[2] – is about the properties of set C. That is why one should expect that all the publications about theoretical physics that concern the theoretical problems in physics are about the conceptual properties of set C.

But neither the Standard model of particle physics[3] nor the Standard cosmological model[4] reflect the necessity to rise above the phenomenological point of view.

On the contrary, it seems that the involved scientists are convinced of the idea that only the most complex and large-scale experiments can solve the theoretical problems. They really love it to merge the intersection of set A and set B with the properties of set C.

References

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