

MATHEMATICS AND PHYSICS AT THE FOUNDATIONAL LEVEL THE WAY AHEAD IS TO KNOW ITS BASIS, ITS ORIGINS IN EMPIRICAL KNOWLEDGE OF THE NATURE WORLD

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Trick or Truth: the Mysterious Connection Between Physics and Mathematics

ABSTRACT

Physics (from Ancient Greek, “knowledge of nature”) is the natural science that involves the study of matter and its motion through space and time, along with related concepts such as energy and force. More broadly, it is the general analysis of nature, conducted in order to understand how the universe behaves. ---from wikipedia.

Mathematics (from Greek, “knowledge, study, learning”), often shortened to maths or math, is the study of topics such as quantity (numbers), structure, space and change. ---from wikipedia.

With this definition in mind this essay will show that the reason mathematics as a tool to explore unknown territory, its ability to reveal new knowledge and prove or disprove existing knowledge about the natural world especially when combined with physics is so effective is because its original deductive premise, symbols 1,2,3 as the natural counting numbers, accurately represent at the foundational level a reality that our sensory perception and experience tell us really exists. Mathematics is mated to physics at the foundational level of both. The natural counting numbers correspond directly to one, two, three existing objects we intuitively subjectively and physical objectively perceive and touch. With a correct deductive premise and the certainty of the deductive logic the conclusions must be accurate and valid in the natural world. The world we say we exist in.

Mathematics is so effective at accurately representing the real world of physical objects and their relationship to each other because the symbols used to represent the natural counting numbers 1,2,3...etc. are directly induced from real sensory experience and their logical use, deductive, cannot therefore be otherwise than totally accurate. Within the limits of the deductive logical applied.

The Deductive premise, the natural counting numbers are accurately symbolically represented by the symbols chosen 10, 20 30 etc. of a really existing situation. With the deductive principle itself mirroring reality it means that the logical manipulation of the symbols themselves alone without any further input from the natural world from which they were by induction arrived at, must then represent when so manipulated conclusions and relationships and conditions as they exist now or could in the future. A bullet orbiting the world when accelerated sufficiently was mathematically represented before its appearance in the real world as an orbiting satellite.

This predictability by mathematics to show future, present and past relationships existing among the physical existing objects whose symbols the mathematics represents is due to the nature of deductive reasoning from factual correct premises.

Put another way the abstraction of the principle, a symbol chosen that will accurately represent an existing conception of the real world I experience, happened so far back in time that now each child picks up on this symbolic nature of numbers 1,2,3 as representations of objects existing in the real world almost as a second nature, a priori. This jump up in awareness from the animal nature of life is far more profound than most people realize.

For try to imagine how you successfully communicate the idea in your mind that ten objects thus: !@#\$\$%^&*()- correspond to the number 10 or the word ten when the person you are attempting to pass this idea onto does not already know! The number 10 is not the object(s) it represents. The number ten doesn't exist in the outside world of physical objects but is instead totally subjective only existing within the mind of the person who possessing a conceptual brain, mind perceives it to be what it is claimed to be a symbol standing in for an actual existing quantity. We understand that the symbol 1, one, will represent a single something that actually exists.

The natural counting numbers represent an objective existing quantity visible and objectively demonstrable to all. This direct relationship is not possible yet with QUALITY. Quality being yet almost totally subjective and relative does not therefore admit of the deductive certainty that mathematics exhibits. This split in our understanding of the world we inhabit for a subjective idea cannot yet be demonstrated to be factual to another even if it is, is the source of our amazement of the effectiveness of math.

The certainty of my own consciousness is not visible to others in the manner of the proof of a theorem and yet this consciousness is more real than the experiences it goes through. This consciousness demanding of a deductive theory that can match the example of mathematics because we sense it more real than all else is the source of much frustration as we now know it is the central part of the puzzle that so far has never been successfully addressed.

The realness of our own existence as the major existing problem without a viable solution therefore makes us all the more amazed that the objective analysis of quantities is so effective and successful. Intuitively we assume that the most important should precede a lesser point. The concept that symbols can represent real objectively existing quantities was a huge leap in awareness and the rest follows logically as a deductive argument. A good foundation is always built stronger than the edifice it supports. Our failure to understand consciousness which itself recognizes the deductive power of math to solve huge riddles and puzzles forces us to sense its almost miraculous powers as somehow belonging to a different universe with different laws and rules than we are familiar with.

The reality of the nature of mathematics however makes this possible because it is based on true existing relationship between objectively existing quantity and objective symbols chosen correctly to match the relationship that exists. The symbols match reality enough to successfully communicate useful information, factual information and knowledge about situations presently existing or not to people who will logical admit of such conclusions once they themselves have worked through the process. This certainty of transferrable and transmittable exact knowledge is because of the nature of the deductive method when the correct premise has been chosen. Religion, Spirituality, Philosophy and investigators of the non-material part of the universe take note.

So far in our evolution no premise has yet come along that can do the same for consciousness that mathematics can do for matter, the materially existing universe. When it does come along a deductive premise that is tied correctly to the real universe by extrapolation from sensory input to induce a similar symbolic representation like numbers, an abstract concept that can accurately represent the nonmaterial world of consciousness, it will be possible to explore correctly this other half of the universe.

There is a caveat here however for just the same difficulty of communicating the idea that a symbol (1) can accurately represent a physical object to one who does not already know this, it will be initially just as hard maybe harder to imagine the correct idea even after it is created and becomes available to all so great is our prejudice to just such an idea as the non-material part of the universe being able to be explored like the material half. Think of Kant's idea of a metaphysics that can be explored scientifically.

Another aspect to consider;

Mathematics by its nature does not give the person an accurate conceptual picture of what exactly the mathematical formulas represent in the real world. See the puzzles of the Quantum world. The person doing the math has to arrive at the correct conceptual meaning and understanding of the formula in order to comprehend what the math is really saying about a real world.

As an example, the symbol a^3 can be taken to mean a cube of side a whose volume would be in applicable units but it could just as easily represent a line a whose length is a times a times a and it is up to the mathematician to correctly decide which is which for any conceptual understanding of what the formula means. The failure to do this results in being unable to relate the discovered relationship back to the real world of sensory input. This is the exact opposite of what the symbols were designed to do. The basic Conceptual understanding of the natural counting numbers accurately representing a real sensory perception was extracted from a real world through sensory input to applicable symbols in the first place. The reverse must also happen with the same certainty for correct and confirmable proof that the deductive logic was correct in the first place.

A further caution mathematics does not sense dimensions, and does not have the ability to differentiate between height, width, length and breadth. This must be determined by the consciousness of the practitioner, for accepting that a mathematical formula signifies dimensions greater than the 3 right angles through a point means at least at the present time you are unable to verify anything as sensory correct because no one can yet imagine dimensions beyond the 3 dimensional universe we perceive.

This will go along way in explaining why with each new “discovery” the universe gets stranger than we imagine to the extent that some at present are happy to report that the universe as a consequence is stranger than we can imagine. So much for comprehending the reality I experience when there is no conceptual understanding to tie in to the real world of complex mathematical formula because no one understands exactly what the formula means and remain content to merely calculate.

We have collectively, scientists, experts and lay people alike in spite of intense effort by all have removed ourselves further and further from our everyday world by complex theories not sensory verifiable. This is on a par with the epicycles of early astronomers, a separation from the reality that the foundational sensory experience that started it all was born. The formulas were correct in that they could predict observed results but only by ad hoc means, adding more epicycles. Later more accurate observations forced people to conclude the explanation offered could not be correct.

Repeated failure to solve problems of recognized importance by all leads to attempts at a sort of de-evolution and pseudo science. Witness the attempts by a

few sensing the dogma, contradictions, irrationality, and confusion among all so called experts at the leading edge of their present discipline disagreeing with each other about what to make of this universe and our life for the benefit of all strive then to return to the childlike times of a supposed former glory of their culture, religion, belief.

This tendency when the road ahead appears impassable or even non-existent to return back to an earlier time when it was felt we, they were closer to a meaningful life is characteristic of all activity that has taken a wrong turn and cannot find the correct way. While a return to an earlier phase of human evolution is not possible it shows the existence and depth of the problem that certain groups see no way out ahead and strive to return to a former time not at all possible as the child has become an adult and must now work his or her way out of the situation we have unconsciously got ourselves into.

The conclusion

The deductive logic and its effectiveness in our effort to understand the universe is the hallmark of the mathematics of the correct deductive conceptual premise induced from factually existing objects. The ability of evolved mathematics to correctly explore the unknown parts of the physical universe awaits the corresponding correct deductive premise induced from factually existing phenomena to represent the non-physical part of the universe, consciousness. When this happens the non-physical part of the universe, consciousness will be able to be explored as accurately complete as we now explore the universe of matter because it will be deductive like math. In fact because these two procedures are the reverse and obverse of each other matter which physics understands and consciousness which _____ understands when taken together as the unity the universe is will enable the whole universe to be more thoroughly comprehended and understood than previously thought humanly possible. So that our amazement at the ability of math as a tool to explain the world we experience will be multiplied by the explanation of consciousness. This will be the real unity of it all.