

## Know Thyself

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**Abstract:** An interpretation of quantum mechanics will be introduced in harmony with the theory of relativity. Similarities between the paradoxes of the theory of relativity and quantum mechanics will be discussed in order to demonstrate that the theories although different in essence have an identical form. The system of arithmetic also appears to have a similar form although it is much more transparent and will therefore be used as guidance. All three systems appear to be casts of the same mould or matrix and the outside of this matrix will be explored. [The Journal of American Science. 2008; 4(2):85-87].

**Key words:** contradiction; paradox; self-evident; spookiness; incompleteness; Matrix

### Introduction:

Though many different interpretations of quantum mechanical behaviour have been created, all of them have one thing in common: they create some kind of undesired by-product. Instead of looking for a new interpretation a combination of two existing interpretations will be used to synthesize a hybrid interpretation. The combining will be achieved by mixing Everett's Many-worlds interpretation with the Copenhagen interpretation. This hybrid interpretation will contain the positive parts of both interpretations while leaving out the negative ones. The positive part of the Many-worlds interpretation lies in the fact that its worlds are real. The negative part is the absurdity of the multitude of universes and will therefore be left out. In the Copenhagen interpretation the negative part is the often debated collapsing of the wave function and will therefore be disposed of, while its single universe will be used. The created hybrid or Many-worlds-one-Universe interpretation can be understood as follows: all parallel real worlds are only different perceptions of the same universe. It is needless for a wave function to collapse because all possible observations happen in different parallel worlds. It is needless for a universe to split into a multiverse because all parallel worlds are only different perceptions of the same universe. All parallel worlds, although all different are equally real and therefore bound to be unreal.

This Many-worlds-one-Universe interpretation is actually already in use for the relativity theory. In that every coordinate system can be experienced as a real world. There exists a multitude of real worlds all describing the same universe, though each world resulting in a different reality (lorentz contraction, time dilation). All these different worlds are only different perceptions of the same universe. All these different worlds are equally real and therefore bound to be unreal.

### Discussion:

Although the essence of the theory of relativity and quantum mechanics is different their form appears to have similarities. There is another logical system which has a shape similar to the former two systems, but which is more transparent. This logical system is arithmetic and it too has a special and a general case. The special case occurs if one only looks at the differences between numbers (only addition and subtraction). When you're inside the system of arithmetic, you look around, what do you see? Numbers, signs, symbols, equations all appear to be under control. But if one is willing to freeze the most basic equation and take a step backwards one can become aware of the following paradox.

$$0 - 0 = 0$$

The difference between equals, equals sameness.

This paradox is the transparent form of the clock paradox in special relativity; the difference between a moving clock and an unmoving clock equals sameness. Similarly, the paradox of Schrödinger's cat; the difference between a living cat and a dead cat equals sameness [1]. Both paradoxes take place in the special case of each theory (without acceleration between the clocks and without entanglement between observer and cat) and can be seen as different casts of the same mould. The source of these paradoxes lies in this: the observer tries to accept both parallel worlds as real without being entangled with either one of them. Thus the observer tries to detach from reality while still being part of it. The observer therefore supposes that the realness of reality is equivalent to the complete reality. But reality is also responsible for its own realness and therefore proves its own truthfulness. Kurt Gödel already demonstrated with his incompleteness theorem that such a self-evident self-fulfilling systematic realisation of reality will either be inconsistent or incomplete [2].

It can now be seen clearly why, in the end, the agents representing the scientific community could only come up with calculations as an answer to Herbert Dingle's inquiry to this clock paradox [3]. The calculations are self-evident and avoid answering the paradox, which lies beyond the self-evident. Dingle's proposition though, of deleting relativity can be compared with arithmetic going back to the roman numbering system. His failure of realising the true nature of this paradox resulted in a mind being imprisoned by ignorance.

One can expand the special system of arithmetic into a general system, by allowing relationships between numbers (multiplication and division). In this case the following question can be formulated revealing the incompleteness of arithmetic accompanied with its paradoxical statement:

$$0 \div 0 = ?$$

The relationship between identicals, identifies unrelatedness.

This shows that within arithmetic one can formulate a question whose answer is un-embodied, thus revealing the incompleteness of arithmetic. This un-embodiment can be referred to as the spookiness of a system. The paradox is the transparent form of Einstein, Podolsky and Rosen's (EPR) paradox and also the twin paradox in the general case [4] [5]. The EPR paper does indeed detect the incompleteness of quantum mechanics, because Einstein's spooky action is un-embodied by the system of quantum mechanics, though a direct result of this system. It shows that the reasoning done by the EPR trio is indeed consistent and the spooky action is its inevitable result. This spookiness was already prophesised four years earlier by Gödel's incompleteness theorem as the shape of inevitability. The EPR trio's twisting conclusion at the end of the EPR paper of dodging spookiness and praising local action reflects a kind of cubicle bliss instead of a thorough comprehension of Gödel's work. The failure of realising the true nature of this paradox results in the mind being imprisoned by ignorance.

This spookiness can also be found in Einstein's solution of the twin paradox, although Einstein himself left the spookiness unmentioned. Einstein's explanation incorporates a homogeneous gravitational field that appears and disappears instantaneously and such an appearance, although an inevitable consequence, is un-embodied by the theory of relativity [6]. This spookiness was pointed out by Geoffrey Builder in 1957, though he too was led astray and failed to realise the true nature of the paradox [7]. The rejection of Einstein's solution of the twin paradox continues to cause a glitch within the scientific program. <System Failure>

The action of an individual measurement which makes a collapsing wave function appear can be compared with the action of an individual acceleration which makes a homogeneous gravitational field appear (continuous measurement or acceleration consists of many individual measurements or accelerations). The self-evident consciousness of the observer is in both cases uploaded with a "new" parallel world. It is the popping up of this "new" parallel world that creates these non-local appearances. It will be impossible for the observer to return to the "former" parallel world and hereby undo the consequences of measurement or acceleration. The appearance of particle entanglement and the appearance of time dilation are as equally real as everything else in the world and are therefore impossible to undo by uploading "backwards". This continuous popping up of a "new" reality is experienced by the self-evident conscious observer as the flux of time.

### **Conclusion:**

Both relativity and quantum mechanics appear to have similarities in their form and can be seen as casts of the same mould or matrix. The system of arithmetic also seems to be moulded by this matrix, hereafter called Matrix [8]. The system of arithmetic is transparent enough to be used as a platform or training program in order to develop an understanding about human understanding. Kurt Gödel already demonstrated the value of this training program with his incompleteness theorem. This theorem prophesises the inevitable incompleteness of non-trivial sufficiently strong consistent logical systems (e.g. arithmetic) and demonstrates a useful pathway for facing paradoxes.

The human intellect appears to be born inside some kind of Matrix, for understanding appears to be moulded inside it. Everything that has an inside has an outside and paradoxes are the gateway towards this outside. For as long as a human being is attached to the bliss of ignorance (and of course ignores this very fact) paradoxes will be experienced as contradictions and the intellect sees the gateway as a blind alley. These "contradictions" are like a splinter in the mind, separating the obvious (self-evident) inside from the spooky (unself-evident) outside. Hence for the uncontrolled mind the Matrix appears as control, and in this way the Matrix separates and protects. When the mind loses ignorance it becomes more clear, contradictions start transforming into paradoxes and a gateway appears. The Matrix opens and unprotects. Once one is able to completely morph the inside and the outside into one without bending the Matrix, then finally can the faceless be faced.

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8. Online Etymology Dictionary, Douglas Harper, 2001. Matrix: 1373, from Old French matrice, from Latin matrix (gen. matricis) "pregnant animal," in Late Latin "womb," also "source, origin," from mater (gen. matris) "mother." Sense of "place or medium where something is developed" is first recorded 1555; sense of "embedding or enclosing mass" first recorded 1641. Logical sense of "array of possible combinations of truth-values" is attested from 1914.