**Rationality beyond ‘space-time’**

**Abstract:** This opinion revolves around the discussion of matters that are beyond the realm of space-time. For instance, it discusses parallel universes, wormholes, and extrasensory perception or psi. Rationality is operationally defined. The opinion throws light on the manner in which the lines of rationality become unclear when it takes into consideration extrasensory phenomena. In addition, it contends that psychiatric disorders such as Schizophrenia are the result of contact from different parallel universes. Hence, Schizophrenia according to this paper is not a disorder by itself but rather just a communication of messages from an alternate reality. Also, another psychological disorder called Dissociative Identity Disorder is also the result of different souls in one person or communication from different souls from parallel universes. Whether atoms are conscious or not is debatable but can be a possibility due to their eerie and unpredictable nature. The concept of parallel universes introduces a paradoxical manner of thinking, which is dealt with in the paper. The paper concerns itself with issues in quantum physics, clubbed with extrasensory perception in parapsychology. It subtly emphasizes rational thinking in the debate about space-time and beyond. Rationality as a concept is dealt with from different angles. Finally, quantum cognition is used to explain an all too familiar, pervasive yet inexplicable domain of knowledge, which is human behaviour.

Key Words: Rationality, Quantum Physics, Quantum Cognition, Space-time, Parallel Universes

**Text:**

Rationality refers to the quality of being based on or in accordance with reason or logic. It means being rational, and agreeable to reason. "Rationality" has different specialized meanings in philosophy, economics, sociology, psychology, evolutionary biology, game theory and political science. The cognitive sciences, psychology, and economics are intimately linked in their interest in rationality.1 Human rationality is characterized by its capacity to relate strategically to the future.2 Psychology has always been concerned with both rational and irrational aspects of behaviour. According to psychology, even abnormal behaviour involves the exercise of thought, reason and logic. Sigmund Freud was insistent that there is method in madness, that neuroses and psychoses were patients’ solutions for problems that troubled them.3 The quantum mechanics view of rationality is quite different. Whenever something comes up that isn't consistent with classical theories, it is often labelled as 'irrational.' But from the perspective of quantum cognition, some findings aren't irrational anymore. They're consistent with quantum theory—and with how people really behave, according to Joyce Wang. Quantum physics deals with ambiguity in the physical world. The state of a particular particle, the energy it contains, and its location—all are uncertain and must be calculated in terms of probabilities. Quantum cognition comes into the picture when humans have to deal with ambiguity mentally. Sometimes individuals aren't certain about how they feel, or they feel ambiguous about which option to choose in which case they have to make decisions based on limited information. With the quantum approach, Wang and her colleagues argued, many different and complex aspects of behaviour can be explained with the same limited set of axioms. Thus it can be said that one is not irrational but quantum probabilistic.4

The lines of rationality become blurry when one encounters paranormal phenomena or psi. During such instances when one comes across a paranormal phenomenon, rationality is blotted out and the principles of conventional science fail to bear fruit. For instance, in precognition wherein a person can accurately predict the future without the help of the five senses, there is no rational explanation. Quantum physicists may explain this as a bleed in the space-time continuum by attributing precognition to one's existence in a parallel universe, much ahead of time than our own. This is a feasible explanation although it might take us years to actually prove the existence of parallel universes by scientific means. The parallel universe theory was incepted in the 1950s and the 1960s.5 Parallel universe theory introduces a new and paradoxical way of thinking. It provides an alternative explanation for psychiatric disorders such as schizophrenia and dissociative identity disorder. Accordingly, in a client with schizophrenia, the hallucinations are real and are emanating from another universe. When it concerns dissociative identity disorder, the different alter egos are real selves in other universes.6

With the discovery of quantum physics - the physics that governs the behaviour of atomic and subatomic matter, gaps in our knowledge were filled and physicists started looking at matter in a very different light altogether. It was discovered that observation plays a vital role in the atomic world. One might ask, then are atoms conscious? If they know they are being observed, why do they behave differently? Do they have a 'self', which one may call 'the quantum self'?

Certain types of processes display a ‘beyond spacetime’ property—or *nonlocality* as evidenced in the quantum entanglement—, including psi, proven to operate beyond-brain and beyond-spacetime.  These anomalies are not only at odds with Relativity but also with the indeterminacy of Quantum Mechanics.7 This brings up the question of unseen worlds, worlds which we're able to access but unable to travel to physically. Right now, the unseen worlds merely seem intangible and their existence is yet speculatory. Visionary physics deals with such matters, as explained in the book "Space time and Beyond" by Bob Toben and Fred Alan Wolf. Space is anything that occupies a space or helps contain something. Space refers to the dimensions of height, depth, and width within which all things exist and move.

Time can be seen as a property that exists when we speak of something moving or the indefinite continued progress of existence and events in the past, present, and future regarded as a whole.Although the term space is devoid of dark speculation, philosophers have regarded time as a dark subject of speculation since everything revolves around it. Time is perceived as being enigmatic and sometimes even incomprehensible. Like a glass thrown onto the floor shatters, the linearity of time is one that matters. The glass pieces cannot be put back together in one piece. In the same way, time once lost cannot be regained. Paradoxically, the access to parallel universes adds a whole new colour to this scenario. Wormholes, or shortcuts in space-time are believed by some theorists to be the secret passage to other universes. A wormhole can be visualized as a tunnel with two ends, each at separate points in spacetime (i.e. different locations or different points of time), or by a transcendental bijection of the spacetime continuum. A wormhole could connect extremely long distances such as a billion light years or more, short distances such as a few meters, different universes, or different points of time.8 As of today, the existence of wormholes is still speculatory and still in theory.

Quantum cognition is a new field which suggests that the mathematical principles behind quantum mechanics could be used to better understand another inexplicable area of knowledge: human behaviour. Decision making, one of the higher cognitive processes can be subjected to quantum analysis. It is said that the making of a decision collapses a thought wave into a particle, according to Jerome Busemeyer and Peter Bruza’s book Quantum Models of Cognition and Decision. “We argue that the wave nature of an indefinite state captures the psychological experience of conflict, ambiguity, confusion, and uncertainty; the particle nature of a definite state captures the psychological experience of conflict resolution, decision, and certainty,” they write. Another key concept in quantum cognition is the idea of “complementarity.” Two ideas are complementary if they are incompatible. This is similar to the uncertainty principle in quantum mechanics, which states that if one is certain of a particle’s position in space, then he/she must also be uncertain of its speed, and vice versa. When this is translated to decision-making, this means that if one is certain about what one thinks about one thing, he/she can’t simultaneously be certain regarding what he/she thinks about another thing.  Behaviours that appear irrational under classical probability models become lucid and rational under quantum theory.9

“Rationality itself depends on how you define it,” Wang says. “It’s perfectly consistent with theory, and so it’s rational. Quantum rational.”

Results and Discussion: Rationality is defined differently in different areas of knowledge. The term rational refers to being of sound mind and having (or exercising) the ability to reason. In psychology, being rational means using conscious thought processes to solve problems. On the other hand, in quantum physics, the word rational is dealt with from a different approach. It is argued that there is nothing about quantum mechanics that defies the laws of logic. No logical contradictions are obtained through quantum mechanics. Nor does quantum mechanics imply the truth of statements that are known to be false. One might think it's contradictory that a cat can be both alive and dead, but that's no more illogical than the fact that a chessboard is both black and white. If one wants to know how you can approach quantum mechanics rationally, one must accept that his/her intuition might be wrong. Then, he/she must examine the evidence for the quantum picture of the universe (such as the double slit experiment). Finally, he /she must revise his/her intuition accordingly. Another way of perceiving quantum mechanics is impressive. The reason behind why people believe quantum mechanics is it is one of the best theories which can explain the world the way it is. Occam's razor tells us that the most promising theory contains the least number of assumptions. The only thing which was assumed here was Planck's constant. The reason behind why the theory survived after much criticism is because it follows intuitive reasoning. A few examples demonstrate this sort of rational thinking and emphasize that quantum physics is rational in its own way, which are as follows:

1) Whenever someone asks us where we are, we cannot tell them our position with precision, because the more we try to know our position, the more we lose our time. (Heisenberg’s uncertainty principle)

2) At the time when we open the refrigerator and start looking for the chocolate- the answer we would get is either Yes or No (Schrödinger's cat)

3) Whenever we gossip about a third person whose sixth sense is considerably high, he/she would get the information intuitively in the form of negative vibes or intuition (quantum entanglement)

4) A person goes to a press conference and doesn't notice the person who was serving drinks to him/her in the midst of the conference. (God's particle).

Conclusion: Rationality is dependent on its operational definition. Its definition varies from one discipline to another like customization of a product for a particular customer. Thus rationality is approached from different paradigms in this article, based on whether one is dealing with quantum mechanics, quantum cognition, abnormal psychology or parapsychology.

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