

# Time and the quantum world

( from Klaus Mainzer The Little Book of Time )

Although the measurement of physical magnitudes in the quantum world is limited in position precision and is statistical in nature, time is still a parameter in a deterministic equation of motion. Called the Schrödinger equation, it is symmetrical in time, just like classical and relativistic mechanics. Consequently, it appears that the quantum world is also a kind of unchanging Parmenides world that lacks a preferred time direction. But in a single case, making a quantum mechanical measurement provides evidence of an irreversible process during which the temporal symmetry is broken. Possible violations of time symmetry also emerge in Quantum field theories, which describe the interactions of Elementary particles. The question arises, will it ever be possible to explain irreversible processes within the framework of cosmic Evolution, supposing that a union between general relativity Theory and quantum mechanics can be achieved? It is suspected that there is an intimate connection between this epistemological discussion of time and many current research topics, including quantum mechanical measurement processes, black holes, and the anthropic principle.

LIMITED NOTES:  $\text{H}^+$  quantum Latin dot  $\text{H}$  contains  $\text{H}$  much + only ( $\text{H}$  only has a limiting quality) (This makes me think of the relation between  $\text{H}$  and  $\text{F}$  must, both limiting also  $\text{H}$  road, and Goethe's  $\text{Wer}$  Grosses will muss sich  $\text{bahn}en$ .  $\text{H}$  = road  $\text{H}$  limits. (He who wills greatness must limit himself.) I use ideographic images to envision relationships among ideas)

I use ideographic images to envision relationships among news

- symmetry (same measure) true to the Korzybskian principle I have made this visual concept structurally similar to the territory mapped.
- violation I correct & break -tion noun cap
- cosmic. Greek "cosmos" means both beauty and order (globality (adjective (-ic))
- principle ... first (prins) ... last) rule strict (samurai sword) - word

If anyone would like more detailed explanations just write to me.

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