

The notion of self

1. The notion of self as evolved through many twists and turns
 - (a) Originally quantum jump and self were postulated as distinct notions assuming that somehow quantum jumps "integrate to self" like atoms of molecule "integrate" to molecule.
 - (b) Then it was assumed that only the quantum jump is fundamental and that they form fractal hierarchy so that "sub-quantum jumps" give rise to the experience about flow of time and continuity of self. It is difficult to understand the duration of self in this picture.
 - (c) One can also argue that since it is not possible to be conscious about that one is not conscious, the gaps between quantum jumps cannot be experienced. One has just quantum jumps. But self is clearly something which is conserved in quantum jumps.
 - (d) The next step was to realize that self or at least self model (!) must be something invariant or approximately invariant under quantum jumps. If NMP is accepted, negentropic entanglement defines this kind of almost invariant since total entanglement negentropy can only increase. It can be transferred, change to new form, but total NE must increase.
 - (e) The next step was to realize that that negentropic entanglement gives rise only to self model. The final solution of the problem came from the realization that self corresponds to an integration of very special kind of quantum jumps together: namely repeated state function reductions at same boundary of CD. This explains arrow and flow of time, self as unentangled subsystem, why self has finite life time, etc..

2. Self and self model have as

- (a) imbedding space correlate causal diamond and at quantum level superposition of them.
- (b) space-time correlate space-time sheet or pair of them forming double covering (should one restrict to region with Euclidian signature defining line of generalized Feynman diagram?)
- (c) quantum correlate a negentropically entangled system. State function can produced negentropic entanglement associated with nxn unit density matrix corresponding to $h_{eff} = n \times h$.

Hence

- (a) Self model is a system carrying potentially conscious information, kind of "Akashic records" readable by interactionfree quantum measurement.
- (b) Connection with quantum computation results since unitary entanglement gives rise to negentropic entanglement with unit density matrix.

3. More detailed structural view about selves emerges

- (a) self hierarchy in analogy with the hierarchies of CDs, space-time sheets, Planck constants, and dimensions of singular coverings of CD
- (b) Self experiences sub-selves as mental images
- (c) Self experiences sub-sub-selves as averaged mental image

implying that

- (a) self hierarchy has entire Universe at top
- (b) we are mental images of higher self

4. At space-time level this means following.

- (a) Spacetime sheets at given level of hierarchy can be disjoint but space-time sheets topologically condensed at them can be connected by flux tubes
- (b) This suggests that subselves of two selves can entangle to single common subself (mental image) shared by both selves and that this gives rise to kind stereo-consciousness.

- (c) This kind of entanglement is not possible in standard tensor product description and requires the notion of finite measurement resolution so that systems corresponding to selves are not entangled in the resolution considered for them but subselves are in the resolution appropriate for them