

## Re: confused w/ decoherence

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- *From:* mahdiarnt <[mahdiarnt@xxxxxxxxxx](mailto:mahdiarnt@xxxxxxxxxx)>
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Thanks very much for all those illuminating points. There are two more questions:

1) So you say that in the "frictionless case," (4) is correct for a pure state. Then it means that the results of successive experiments are independent of the previous ones (or am I wrong?) Then there is no wave function reduction at this level at all, whatever interpretation we choose. This is weird (and perhaps measurable), though I don't know whether those traditional experiments have really tested this.

By the way, honestly, what you/they are doing here is giving up the concept of wave function reduction (which is not a unitary operation and can't be achieved by Hamiltonian time evolution) but then postulating a new principle, namely (4), which is again non-unitary (as opposed to (2) which is the Hamiltonian evolution). I mean measurement still remains weird. I think the solution should have been to abandon the entire concept of measurement in the "frictionless" world: It must necessarily be a decoherent process.

2) Is there a proof that for complicated enough entanglements, (6) resembles what we would expect from wave function collapse? As this might be a limiting proof (full resemblance only when  $N \rightarrow \infty$  the number of environment's components goes to infinity), are there testable disagreements with the wave function reduction principle?

Thanks again for attention.

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