

## *Quantum-Bayesian or QBism*

In the Quantum-Bayesian or QBism approach, the wave function is updated according to the manner in which the phenomenon creates a particular experience within an agent. It is claimed that there is no nonlocality in QBism and that the “notorious collapse of the wave-function” is nothing but the updating of an agent’s state assignment on the basis of her experience [180].

In QBism, there is a separation between object and observer, observers now being agents that can have individual experiences. QBism further directs the observer, referred to as Alice in [180], to treat “all external systems on the same footing, whether they be atoms, enormous molecules, macroscopic crystals, beam splitters, Stern-Gerlach magnets, or even agents other than the observer.” QBism applies Schrödinger’s equation to all such external systems.

Now, suppose that the observer Alice has built the Chapter 3 UMDT test and is able to utilize various devices with a range of complexity in the devices. Initially she sees the value  $2\sqrt{2}$  in her experiments. But one day, Alice found the CHSH sum to be  $\sqrt{2}$ . She performs the test again and again. She sees if others can reproduce the results of the experiment. After the results of the experiment were reproduced by several groups, she concludes that there really are particular configurations of systems that function as measurement devices. She now is obligated to NOT treat all external systems on the same footing, whether they are atoms, enormous molecules, macroscopic crystals, beam splitters, Stern-Gerlach magnets, or even agents other than the observer. She discards QBism as yet another interpretation (YAI) that did not give the correct results to an actual experiment. She concludes that the von Neumann formalism is incomplete. And it reminds her of what was being said in some book on the Quantum Measurement Problem that she had read several decades ago. A book she recalls that she never had really fully understood. She finds the book and re-reads it and now it suddenly makes perfect sense to her! She looks up the authors and finds they are in their 90s. She doesn’t contact them because she figures they probably by now have gone senile or are in some old-age home. And she is correct on both counts. She agrees that the use of inductive methodology is not an appropriate research methodology to be using as the problem lies outside the problem set that induction is designed to address. And she takes their advice and does undertake a serious *deductive* investigation of the measurement problem. She begins to investigate both theoretically and experimentally the physical reasons and conditions under which measurement occurs.