Macroscopic Interaction

In [178] Allahverdyan, Balian, and Nieuwenhuizen propose a scheme that is a variation on Rosenfeld's solution. Their approach has similar shortcomings as Rosenfeld's solution. The authors have a means of providing a measurement basis *given* a measurement occurs. Hence, they have a solution to the philosopher's measurement problem. However neither in [178] nor in their proposal using the Curie–Weiss model in [179], have the authors' met the important requirement of providing credible necessary conditions under which a particular outcome or reduction occurs. That is, it is known that there exist various decoherence and relaxation processes that are experimentally reversible and unitary. Hence neither decoherence nor relaxation is a sufficient condition for measurement. In order to show significant progress on the physical measurement problem, the authors would need to further justify theoretically why a particular specific and sufficiently detailed model is either a necessary and/or sufficient condition for which a particular outcome or reduction occurs, and then experimentally confirm that the unitary predicted entanglement is eliminated for the configurations that they propose. These might be considered to be tasks of tall order. Perhaps, however minimal scientific requirements required for credible acceptance are not simply waived because one decides to engage a difficult problem.