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It is well known that dynamical systems posed *near a second order phase transition* generate a bewildering variety of robust and flexible behavior, associated with the abundance of metastable states at the critical point. This universal feature led us to argue, since the last millennium, that the most fundamental cognitive properties of the functioning brain are *only possible* because it is spontaneously located at the border of such instability. In this talk we review the motivation and then describe recent experimental results, both in health and disease, at various brain scales ranging from a few millimeters up to the entire cortex. Finally we will discuss which aspects of the mind dynamics can be usefully explained in terms of critical phenomena, as well as the lesson and implications for building emergent intelligent devices.

Papers and background information can be found in [www.chialvo.net](http://www.chialvo.net)