



ON THE IMPORTANCE OF BEING CRITICAL

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Being critical, i.e. able to process and distill relevant information, is crucial for living systems. Learning distinguishes living from inanimate matter. Quantifying this distinction may provide a "life meter" that, for example, can allow us to detect alien life forms in astrobiology. Living systems also respond in an anomalous manner to perturbations, as compared to inanimate matter, unless the latter is poised at a critical state (in the statistical physics sense). I argue below that these two notions of criticality are only apparently different, because a system that learns is inherently critical, also in the statistical physics sense.

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