How about living in a non integer dimensional world?

Life would (mathematically) be far more comfortable; the ordinary integral would extend beyond $L^1$ functions to a canonical integral with all the required properties (covariance, translation invariance...); no renormalisation would be needed.

We shall explain how poles arise at integer dimensions, which require implementing regularisation techniques such as dimensional regularisation in physics. We shall draw a parallel with regularisation techniques used in number theory to count positive integers by means of the zeta function evaluated at zero. This leads to interesting analogies between renormalisation techniques used in physics to make sense of Feynman type integrals and in number theory to evaluate multiple zeta functions at poles.