Thirty–one years ago [ab 1980], Dick Feynman told me about his „sum over histories“–version of quantum mechanics. „The electron does anything it likes“. he said, „It goes in any direction at any speed, forward and backward in time, how ever it likes, and then you add up the amplitudes and it gives you the wave–function.“ I said to him „You're crazy“. But he wasn't. F.J. Dyson

Vorspann zu Chap. 5 in L.H. Ryder *Quantum Field Theory*, Cambridge *UP* 1996

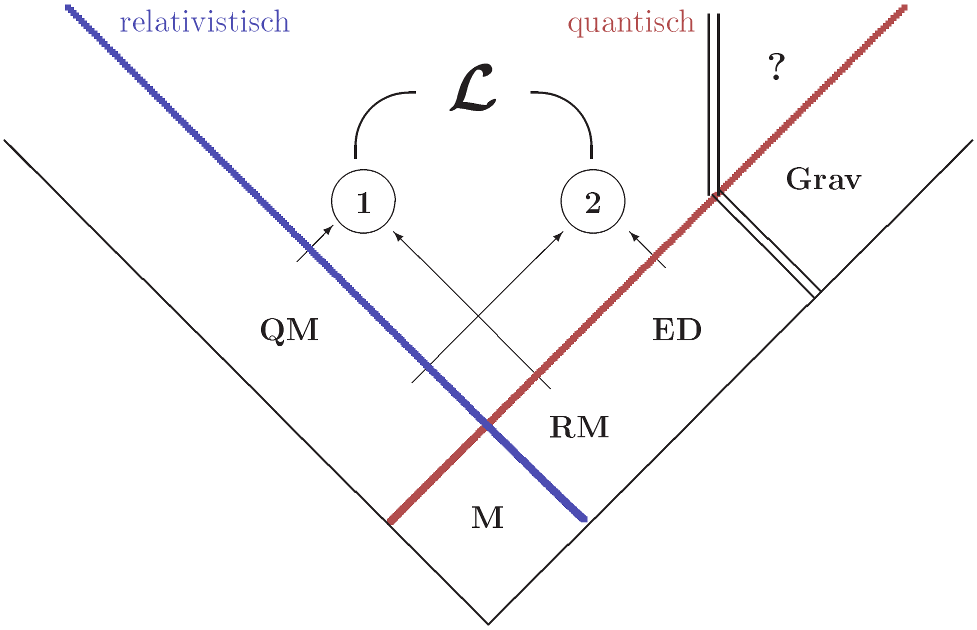
Ashok Das, *Field Theory.*
A Path Integral Approach (World Scientific 1993), Introduction :

Traditionally, field theory had its main thrust of development in high energy physics. Consequently, the conventional field theory courses are taught with a heavy emphasis on high energy physics. Over the years, however, it has become quite clear that the methods and techniques of field theory are widely applicable in many areas of physics. The canonical quantization methods, which is how conventional field theory courses are taught, do not bring out this feature of field theory. A path integral description of field theory is the appropriate setting for this. . . . .

G. Roepstorff, *Path Integral Approach to Quantum Physics*
(Springer 1996), beginning of Chapter 7 :

> Die Sprache der Mathematik erweist sich als über alle Maßen effektiv, ein wunderbares Geschenk, das wir weder verstehen noch verdienen. Wir sollten dafür dankbar sein und hoffen, daß sie auch bei zukünftigen Forschungen ihre Gültigkeit behält und daß sie sich – in Freud und Leid, zu unserem Vergnügen wie vielleicht auch zu unserer Verwirrung – auf viele Wissenszweige ausdehnt. E. Wigner

Soon after its invention, quantum mechanics was superseded by the quantized theory of fields, which by now has reached a stage where the theory is firmly established and generally believed to provide a consistent and almost complete description of nature. It is designed so as to incorporate both the principles of quantum mechanics and the laws of special relativity. Still, despite its many successes, the theory is undoubtedly beset with great conceptual difficulties and paradoxes of infinity which prompted theoreticians to seek alternative formulations and to recast the theory over and over again until it became a practical language for describing the observed processes among elementary particles.



Es gibt nur eine Natur, folglich nur eine Physik. Und natürlich g i b t es auch für unser Verstehen der Einheit der Welt d i e eine geeignete Formulierung. Nur, wer weiß schon, welche es ist. Dafür, daß sie „Lagrangisch“ bleibt, stehen die Zeichen allerdings recht gut.