

Another physicist, Richard Sherman, saw just how tremendous Feynman could be in this problem solving role, when Sherman was halfway through his first year as a graduate student at Caltech, doing research on superconductivity. He was in Feynman's office, writing up equations on the blackboard, and Feynman was analysing the work almost as quickly as Sherman could write. Then, the telephone rang. The caller had a question about a problem in high-energy physics. Feynman immediately switched into a discussion of the complicated problem involved, talked for about 10 minutes and resolved the caller's difficulty. He hung up the phone, switched back to superconductivity and carried on exactly where he had left off, until the phone rang again. Somebody else had a problem, involving solid state physics. Feynman solved it, and went back to superconductivity again. 'This sort of thing went on for about three hours – different sorts of technical telephone calls, each time in a completely different field, and involving different types of calculation. [It] made a tremendous impression on me. It was staggering. I have never seen that kind of thing again.'¹⁵

Another Caltech graduate student, who was supervised by Murray Gell-Mann in the 1960s, unconsciously echoed Marc Kac's comments about the nature of genius (which he was unaware of at the time) when he told us that 'Murray was clever, but you always had the feeling that if you weren't so lazy and worked really hard, you could be just as clever as him. Nobody ever felt that way about Dick.'¹⁶ Feynman may not have built up a large school of graduate students under his direct supervision, but he was a father figure and inspiration to all the graduate students in physics at Caltech during his time there, even the ones supervised by Gell-Mann!

Hagen Kleinert, who now works at the Institute for Theoretical Physics in Berlin, visited Caltech as a young professor in 1972. 'I had actually been hired by Gell-Mann,' he told us, 'but he was very hard to learn from since he always pretended to know everything from pure intuition without any ditch work.'¹⁷ The person Kleinert learned most from during his visit was Feynman, who gave a weekly seminar on the path integral approach to the young postdoctoral researchers. During the course of these seminars, Feynman explained that he had stopped teaching path integrals at a less advanced level, because he had never derived a complete path