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## A Curious Character, A True Genius: Richard Feynman

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What makes for genius in science? One day we may be able to link it to particularly advantageous patterns of neurons and axons in specific locations of the brain. But even if that day should come, I suspect that a genius for science will always defy our attempts to describe it fully. It's much easier to acknowledge an example, like that of the late Richard Feynman.

Just as the physics community was beginning to get used to a world without the vibrant presence of Feynman, who passed away last February 15, there comes a reminder of his unique mind and personality. The reminder takes the form of a book entitled *What Do You Care What Other People Think?* (W. W. Norton, 1988) a sequel to his enormously popular bestseller published in 1985, *Surely You're Joking, Mr. Feynman*.

Like the first book, the new volume is chock-full of Feynman tales of life inside and outside physics. Throughout the book, and especially in the long section on Feynman's participation on the Challenger commission, the readers gets a taste of the famous physicist's extraordinarily direct way of looking at the world and his dogged in-

sistence on finding answers to his questions. For those of us who were not privileged to know Feynman or to listen to him lecture, these and his other writings alone convey a sense of the man's genius.

To say that Feynman was unconventional is an understatement. He was uniquely unconventional; in fact, he described himself as "actively irresponsible." Apart from his love for physics, he also had a passion for playing the bongos, drawing the human figure, and learning new languages (including Mayan hieroglyphs).

Catholic tastes by themselves do not make for genius, but they are a sign of a special kind of curiosity that Feynman always had and was willing to follow wherever it led. As others have said, he pursued knowledge without prejudice. That took confidence, fearlessness, and a refreshing indifference to what anyone else might think of him.

Wide-ranging curiosity about the world has another, more specific advantage: It can allow one to make connections that a narrower view prohibits. Aristotle, in his *De Poetica*, observed that the ability to make such connections through metaphorical thinking is "a sign of

genius...[it] implies an intuitive perception of the similarity in dissimilars." He went on to say that this ability "cannot be learned from others." Indeed, in this as in much else, Feynman was self-taught.

His ability to take fresh, often off-beat approaches to problems—coupled with a breadth of knowledge and experience that permitted him to see all sorts of connections—clearly contributed to his genius. When he won the Nobel Prize in 1965, it was for rebuilding from the ground up, the whole of quantum mechanics and electrodynamics. And to this achievement he added his personal signature in the form of diagrams of particle interactions that elegantly simplified the complexity of the physics.

In a lifetime he produced over

two dozen papers and books that qualify as Citation Classics, and hundreds of publications in all. That's not bad for someone who didn't like to write.

There was only one Richard Feynman, but his life and his attitude about life and work can be instructive to us all. At the least, it should provoke some questions: Do we feel as able as Feynman to let our curiosity roam freely? Do we allow our eyes to survey the landscape all about us, or are they fixed narrowly on the ground at our feet? Do we care too much what our colleagues might think of us if we turn in an unconventional direction? Have we built a profession that inhibits a genius like Feynman's? I think it is worthwhile to ponder such questions. ■