

On the Nature of Genius



Part I

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On the Nature of Genius

Chapter 1



On Preconceptions



“Why did you use this picture of me, Gráinne?”

“It’s about knee-jerk reactions, Éibhleann. Preconceptions. You are a good looking woman, Éibhleann.”

“Oh, you mean if I wore a business suit, people might think I was more intelligent?”

“In what way does your being a good-looking woman hinder your brain capacity, Éibhleann? If you have attractive hair and look well, does this in some way mean you are less intelligent? If you have interests outside the sciences, does this mean you cannot understand science?”

“An example, Gráinne?”

“Certainly, Éibhleann. For this example, I will need to bring in Mr. Slate.”

“And you are always Ciarán when talking to Mr. Slate. It’s just a reminder for people reading that you are Ciarán when talking to men, or to women who do not recognise you as Jedi.”

“Thanks for reminding them, Éibhleann. Now, let us see if we can find Mr. Slate.”



“Mr. Slate, I have someone here who would love to meet you.”

“I would love to meet him, Ciarán. Who is he?”

“He is a musician, Mr. Slate. He plays violin to concert level standard. He is interested in physics so I thought I would introduce him to you.”

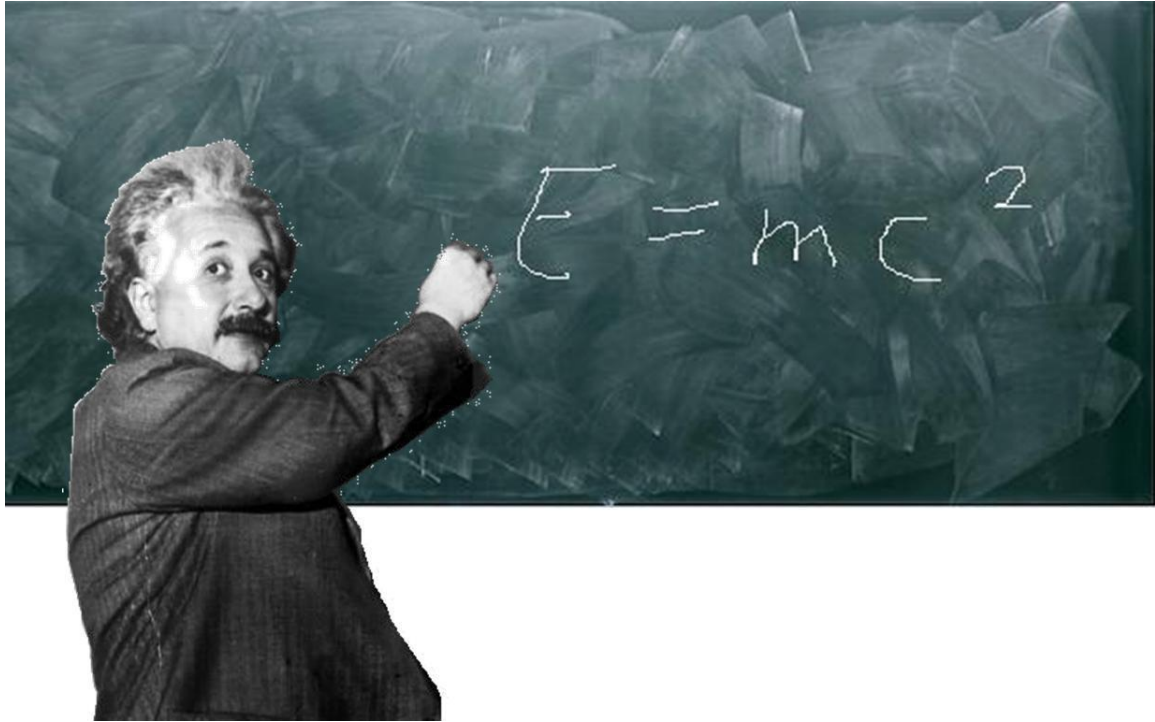
“Thank you, Ciarán, but please understand that I am a scientist. I work with Quantum Mechanics and very abstract scientific concepts. It is not something a musician would understand.”

“But Mr. Slate, he also does physics.”

“No, Ciarán. You said he played the violin. Therefore he cannot understand physics. A musician is a very different profession. If he plays violin, then he cannot understand physics.”

“Ok, Mr. Slate. I’ll tell him you are not interested in meeting him.”

“Thank you, Ciarán. My time is very precious and I don’t really have time to talk to musicians. Certainly not about physics. By the way, what is his name?”



*“His name is Albert Einstein.
He plays violin. He is a musician.
He also does physics.”*

“Yes, Éibhleann?”

“Mr. Slate thinks that Albert is somehow less able to do physics if he is introduced as a musician? That being a musician somehow diminishes his ability to do physics? That’s it, Gráinne?”

“That’s it, Éibhleann. This knee-jerk is very common among scientists.”

“And not just among scientists, Gráinne.”

“No, Éibhleann. Not just among scientists.”

“Let us try another example.”



“Mr. Slate, I have someone here who would love to meet you. He is actually a physicist.”

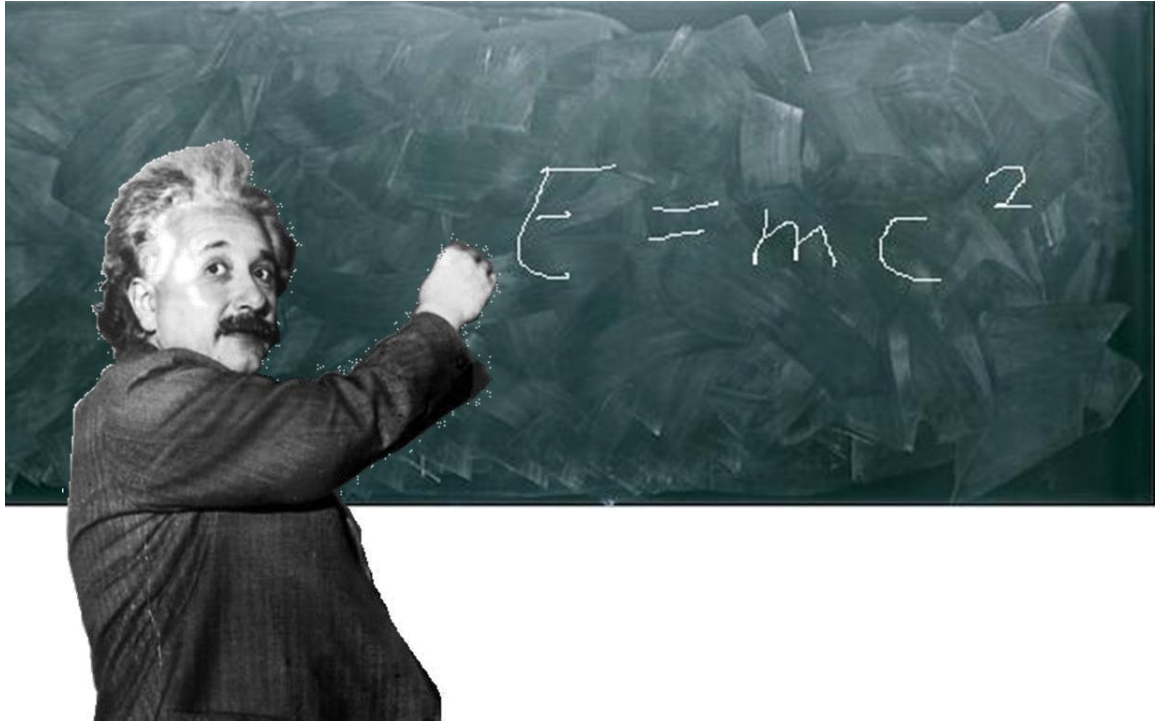
“I would love to meet him, Ciarán. Tell me about him.”

“He did physics in university but barely scraped a pass. Finished somewhere bottom of his class.”

“Enough, Ciarán! I am a serious physicist! I would not be able to take anyone who barely scraped a pass seriously. Please tell him that I am sorry, but my time is very precious.”

“Ok, Mr. Slate. I’ll tell him you are not interested in meeting him.”

“Thank you Ciarán. I really don’t have time to talk to someone who finished somewhere bottom of his class. Certainly not about physics. By the way, what is his name?”



“His name is Albert Einstein”



“Could you explain that please, Gráinne?”

“Certainly, Béibhinn.

Genius requires creativity. The ability to think in new ways.”

“If they weren’t thinking in new ways, they wouldn’t come up with new ideas.”

“Right, Béibhinn. Insight, leaps of understanding, inspiration. These are essential to the creative process.

A person such as Albert Einstein requires this freedom. He would thrive in a creative environment.”

“But he is completely stifled in a rigid environment?”

“Right, Béibhinn. For a very creative person, rigid structure and rote learning is soul destroying. It could send that person into deep depression.”

“As it did Albert?”

“Yes, Béibhinn. As it did Albert. The Prussian education system was very rigid and it sent him into such a depression that he could not bare to look at physics for a year after he finished college. Even then to pass his exams, which he just barely did, he had to cram to scrape through. This experience with depression affected him for many years.”



“You can relate to this, Gráinne?”

“Yes, Sor-roc-ah. Yes I can.

My degree was in Electronic Engineering and my experience of university was so depressing that took me about two years to pull out of it. I finished absolute bottom of my class and after college I took eight months out simply to walk for hours down by the beach or through the forest.”

“For that time you never once looked for work, Gráinne?”

“No, Sorcha, That was simply time to walk every day. It was my time to try to pull myself out of depression.”

“Did you have a history of depression, Gráinne?”

“Most certainly not, Sorcha. The depression was caused by years of being ground down by the education establishment.”

“The more creative a person is, the more this will affect him?”

“Yes, Sorcha. You will see this pattern with creative people everywhere. Rigid structure and rote learning in college can act to crush the spirit of creative people.”



“How could one verify that this is indeed a pattern, Gráinne?”

“Very easily, Ee-fa.

Look through history to the most creative people. The greatest geniuses. And look at their experiences of the education system.”

“Many of them were drop-outs, Gráinne?”

“Many, Aoife. Not just in school and college, but also in business. In work. In society. They could not fit in to the rigid way of thinking. Their creativity constrained. Like a fish on dry land, they find it suffocating.”

“You’ve been a drop-out, Gráinne?”

“For much of my life, Aoife. Let’s just say I don’t fit in.”



“Mr. Slate, I have someone here who would love to meet you.”

“I would love to meet him, Ciarán. Tell me about him.”

“He works as a clerk.”

“A clerk? Really, Ciarán, I am a physicist with a PhD. I do not have time to talk to a clerk!”

“But he does physics in his spare time, Mr. Slate.”

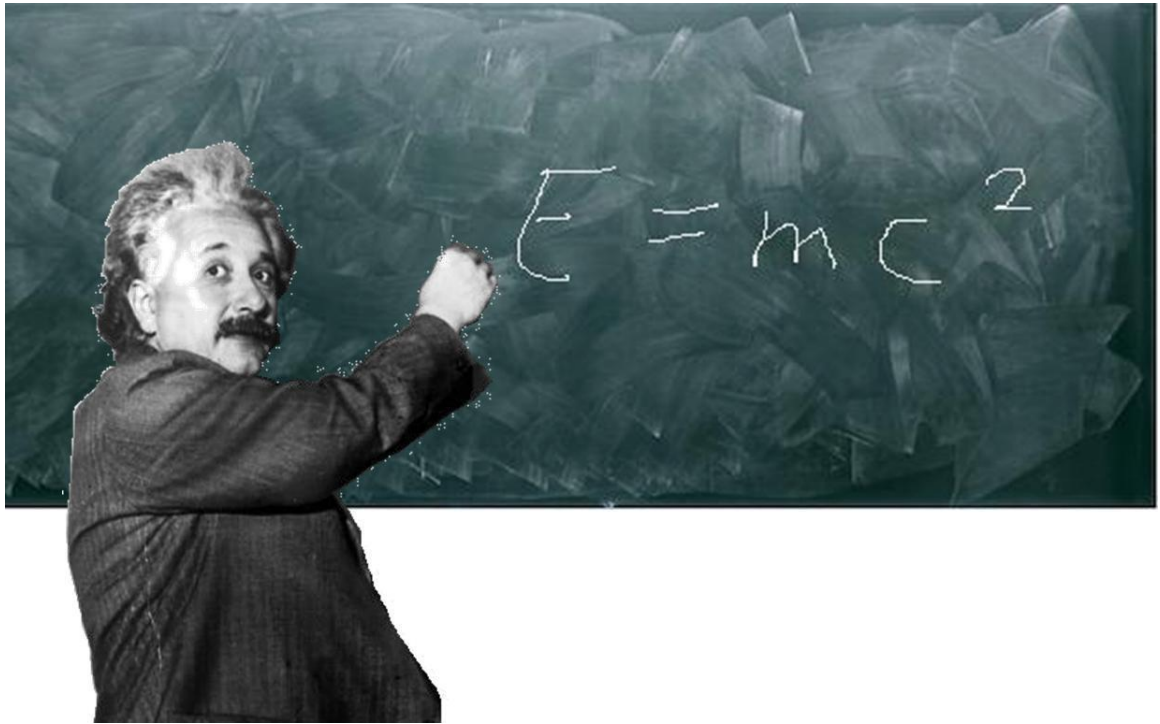
“Does he work as a physicist, Ciarán?”

“No, Mr. Slate. But he does have a degree in physics. He just couldn't get a job in physics because he finished somewhere bottom of his class. So he has worked as a clerk for years.”

“But he does not work as a physicist, Ciarán?”

“No, Mr. Slate. But his job as a clerk gives him plenty of free time to think. And so he often daydreams in work, thinking about physics. And working on problems when he has spare time.”

“Thank you, Ciarán, but I do not wish to meet a clerk. By the way, what is his name?”



“His name is Albert Einstein”



The year is 1905. And an unknown clerk called Albert Einstein has just submitted three papers in Annalen der Physik (Annals of Physics).

Einstein was 26 years old. A drop-out from physics after he almost flunked his exams. Finishing somewhere down around bottom of his class. After which he took a job as a clerk.

An unknown. Until in 1905 this unknown clerk submitted three papers in one journal of Annalen der Physik. Any one of these three papers would have established him as a major scientist, for each paper was ground-breaking in its field.

In his paper on thermodynamics (on Brownian motion) he proved the existence of atoms.

In his paper on the photoelectric effect, for which he received the Nobel Prize, Einstein established that the effect was explained in terms of quantisation, which was key to helping lay the foundations of Quantum Mechanics.

And in his third paper Einstein introduced a new branch of physics, that he had just invented. Special Relativity.

Three different fields of physics. And in each of these fields, Einstein overthrew physics.

1905 was also the year in which Einstein derived the energy-mass equivalence.

$$E = mc^2$$

It was his Golden Year. It was the year in which an unknown clerk, a drop-out, turned physics on its head.



It is true he was unconventional



His ideas were unusual



But he overthrew physics



*And he did it in his own way.
Even if that did mean flouting convention.*



No words, Albert. There are no words.

[Einstein's Big Idea | PBS America](#)

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