

Tullio Regge – Short Autobiography

The most important personage in my life as a research worker was no doubt my father. He was born in a poor family, my grand father displaced for money livestock from a market to another and my father very often had to help the family budget hoeing in the fields. By toiling heavily he succeeded to put aside money enough to enroll as external candidate to the exam for the certificate of land surveyor (geometra). Meanwhile the Great War broke up and he was called for military service in Friuli. He miraculously succeeded in getting a leave, officially to meet his family; he used it to introduce himself in the exam and became a land surveyor (geometra), a job remunerative in those times. He went to Turin, raised a family and started buying at the “flea market” a huge amount of used books in science, astronomy and even university courses. He even wrote a scientific book where he asserted that Newton's gravitation law was wrong, instead of the inverse squared it was the inverse cubic distance.

He couldn't succeed in persuading the people who knew but he convinced me to study science and enroll at the Turin Polytechnical School, he always dreamed to be a doctor in Engineering and wanted me to fulfil his dream. At the end of the two propedeutic years prof. Ubaldo Richard, at that time assistant of mathematical analysis, drew me aside and persuaded me to abandon the Polytechnic and study Physics at the University. He introduced me to Alessandro Terracini, a personage for whom I have a great memory, better known as “Don Lisander”, who in turn introduced me to the Director of the Institute of Physics, Gleb Wataghin, born in Birsula, Cherson district, but Italian citizen: Wataghin accepted me as internal student.

Wataghin knew about all great physicists in the world, I was gaping at him, he roused up my imagination. In those days all the great men of contemporary physics, those who created quantum mechanics and field theory, passed through Turin. I remember well in particular my meeting with Wolfgang Pauli, an unbelievably bad tempered personage. I was taken into custody by Mario Verde who started me on Theoretical Physics. Verde didn't like lyrical flights of fancy but in return subdued me to a severe discipline I had urgent need of.

My research activity started indeed with Verde who advised me to read the fundamental works about nuclear physics and other ones, about the physics of the quanta. After I graduated I met Eduardo Caianiello, a Neapolitan and a truthful friend, who persuaded me to go to the Rochester University in USA, where I remained for about two years. At the end of this period I met John Wheeler who persuaded me to work on the oscillations of a Black Hole. Our work was published and received a considerable resonance. A little later I was invited to Munich, at the Institute directed by Heisenberg, and finally I started a long commuter activity between Italy and Princeton USA.

What considerations can be drawn from these autobiographic hints? First the family counts a lot, my father's example was to me the determining factor; I also got the good luck of meeting people of high scientific and moral value also abounding in sound judgment who could recommend the young people: to them goes my gratitude.

However even the example and the good advices wouldn't be enough, if physics and indirectly all science had not reached in the post war years the top of popularity. The discovery of the atomic energy incited both enthusiasm and imagination of the young generation to a level that was perhaps exaggerated and left fading into the background the horrors of war and the victims of Hiroshima and Nagasaki. Today's intolerant antiscientific mysticism had not yet materialized and science enjoyed good reputation.

Arrived in the USA started my descent into the Hades of subnuclear physics and the erection of the great accelerators as well as the beginning of the Big Bang and the exploration at large scale of the Universe.

What remains today of those times? I can't unfortunately judge and express detailed advices about subjects I am incompetent of but have respect and admiration about. Some considerations hold.

Humanity is even now tormented by serious diseases whose cause resides in the end both in the human genome and in the genome that resides in our aggressors' organisms. I believe this menace is an essential reason to pursue in our research activity both in biology and in medical pathology using tools, instruments and even ideas originated from other disciplines; not by chance the discovery of DNA, the double helix, was made by physicists in the early afterwar.

The exploration of space has opened new exciting perspectives both in cosmology and in subatomic physics, the infinitely big and the infinitely small are connected by threads that the layman can't see, in this field we are just at the beginning of a series of great scientific discoveries and revolutions.

To the young people I tell I wish they could find great Masters abounding not just in science but in wisdom too as I found out, an advice well given at a crucial instant is enough to change our life. Something else is needed. A few year ago I met a conductor, I asked him what pushed him towards music; he answered concise, lapidary: "maniacal passion". Even in science, not just in music, maniacal passion is needed, indeed, the ancients called the science of their times "music of the spheres". Without passion not just research, any creative human activity just reduces to trivial book keeping, a sad end.

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