

John Archibald Wheeler

John Archibald Wheeler was born in 1911 in Jacksonville, Florida – he adopted the Archibald from his mother’s side. His upbringing was in many parts of the US given his father’s job as a librarian, and he even spent a year in a small rural school in which there was only one teacher for all classes! His early interests included chemistry (he caused at least one explosion as a boy!) and mechanical devices often made from carving wood with his own hands. He recalls instances of youthful rashness or daring, like walking over a pipe straddling a tank of cyanide in a Mexican gold and silver mine. Surely this was a precursor to his courage and confidence in attacking the most difficult and fundamental problems, such as quantum gravity, as well as intricate practical problems, as encountered in the first nuclear reactors. To some extent, this also reflects the spirit of the times as such themes are common to the lives of many scientists in the US of that period. It was not a period of prosperity for the Wheeler family, which had to move repeatedly in search of employment. Libraries were not a high priority in the great depression which started in 1929, but the upbringing seems to have fostered a deep culture of reading in addition to the can-do attitude. He also acknowledges the contribution and encouragement of a few outstanding teachers in his schooldays.

His talents in both physics and mathematics seem to have been recognised early in Johns Hopkins University. He even had an offer of guidance for a PhD by A Wintner, a professor of mathematics well known for work on infinite determinants and matrices – but preferred physics. His early papers do not hesitate to plunge into detailed calculation and comparison with experiment. Later in his career, his own presentation of his work, and that of others, did involve striking physical analogies and picturesque language, and a preoccupation with fundamental concepts and questions the interaction with Niels Bohr must have surely played a role here. The number of students whom he guided for both undergraduate and doctoral theses was much larger than typical for his colleagues in Princeton. He had the imagination to think of many interesting problems and the energy and enthusiasm to pursue them with his younger colleagues and students – he in turn felt he always learnt by teaching. Many more who did not have personal contact were inspired by his writings.

Given his stature, broad knowledge and wide contacts, as well as temperament, it is natural that he was offered, and took up, leadership roles at a national level, including in the Manhattan and Matterhorn (i.e., fission and fusion weapons and reactors) projects. He did not feel the same regrets regarding his work on nuclear weapons as some others did. He was also consultant and adviser in many other industrial and academic contexts, and in service roles in the scientific

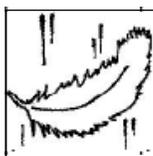


community, for example in The American Physical Society. But it is very clear from the course of his later years that his heart was in physics at the most fundamental level space/time/ gravity on the one hand, the quantum on the other, and the unification of these two pillars. This was not a solitary journey of contemplation, but an unfinished voyage of adventure which he enthused many others to join. He passed away in 2008.

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- ❖ In any field, find the strangest thing and then explore it.
- ❖ No phenomenon is a real phenomenon until it is an observed phenomenon.
- ❖ It is my opinion that everything must be based on a simple idea. And it is my opinion that this idea, once we have finally discovered it, will be so compelling, so beautiful, that we will say to one another, yes, how could it have been any different.
- ❖ If you haven't found something strange during the day, it hasn't been much of a day.
- ❖ To hate is to study, to study is to understand, to understand is to appreciate, to appreciate is to love. So maybe I'll end up loving your theory.

– John Wheeler

