Science and the Future of Mankind
Pontifical Academy of Sciences, *Scripta Varia* 99, Vatican City 2001
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CLAUDE COHEN-TANNOUDJI

I was born on April 1, 1933, in Constantine, Algeria, which was then part of France. My family, originally from Tangiers, settled in Tunisia and then in Algeria after having fled Spain during the Inquisition. In fact, my name, Cohen-Tannoudji, means simply the Cohen family from Tangiers.

I completed my primary and secondary school education in Algiers and left Algiers for Paris in 1953, before the war in Algeria and the stormy period that preceded independence.

I came to Paris because I was admitted to the Ecole Normale Supérieure. The four years I spent at this school were a unique experience.

Being fascinated by Alfred Kastler's lectures in physics, I decided to join his group to do my "diploma" work and I think that what I learned during that period was essential for my subsequent research work. After the final "Agregation" examination, I left Ecole Normale as a student. In 1960, I returned as a researcher and submitted my Ph.D. in December 1962. Shortly after, I was appointed to a position at the University of Paris. Understanding atom-photon interactions was one of the main goals of our research group and led us to develop a new approach, the so-called "dressed atom approach", which turned out to be very useful in providing new insights into atom-photon interactions.

Another important event in my scientific life was my appointment as a Professor at the Collège de France in 1973. In the early 1980s, I chose to lecture on radiative forces, a field which was very new at that time and I formed a new experimental research group on laser cooling and trapping with Alain Aspect, Jean Dalibard, and Christophe Salomon. We began to investigate new cooling mechanisms suggested by the dressed atom approach. Our work was devoted to the understanding of the mechanical effects of light and to the investigation of possible applications of these effects.

In 1997, I was awarded the Nobel Prize in Physics jointly with Bill Phillips and Steven Chu for the development of methods to cool and trap atoms with laser light. This research field has considerably expanded during the last few years and I will try to describe a few recent developments and applications in the paper which follows this self-presentation.