A Conversation with Valentine L. Telegdi – Part II

Sara Lippincott

In this wide-ranging and anecdotal interview, the Hungarian experimental physicist Valentine L. Telegdi, who died on April 8, 2006, offers recollections of Enrico Fermi and Gregor Wentzel in the early 1950s at the University of Chicago. He recalls the discovery of quarks in 1963 independently by Murray Gell-Mann at Caltech and George Zweig at CERN. Comments on the establishment of the Erice summer school. Describes his work on the anomalous magnetic moment of the muon (the “g-minus-2” experiment) with Richard Garwin at CERN. Recalls the colloquium given at the ETH (the Swiss Federal Institute of Technology) in the late 1940s by Richard Feynman. Recalls his 1956 sabbatical at the Institute for Advanced Study; recollections of John Archibald Wheeler. Comments on the decline of physics at the University of Chicago after Fermi’s death (1954) and the switchover from liberal military funding to the more cumbersome NSF grants process; contrasts that with the generosity of the ETH. Comments on his early days at Chicago and his long-standing friendship with Murph [Marvin L.] and Mildred Goldberger. Recalls his three-month stay at Bristol University in 1947 while still a graduate student at ETH and his friendship with Richard Dalitz. Comments on Stephen Hawking. Recollections of P.A.M. Dirac. Comments on Jerome Friedman, Richard Taylor, and Henry Kendall; on Nobel Prizes and the reason for Arnold Sommerfeld’s failure to receive one. Recalls receiving the Wolf Prize in 1991 (along with Maurice Goldhaber) and an honorary degree the same year from the University of Chicago.

Key words: Swiss Federal Institute of Technology; University of Zurich; University of Chicago; CERN; University of Bristol; Louvain University; University of Budapest; Brookhaven National Laboratory; National Science Foundation; Nobel Prize; National Academy of Sciences; Wolf Prize; California Institute of Technology; Erice Summer School; Stanford Linear Accelerator Center; Stanford University; Yale University; Niels Bohr; Subrahmanyan Chandrasekhar; Georges Charpak; H. Richard Crane; Richard Dalitz; Robert Dicke; Paul A.M. Dirac; Roland von Eötvös; Enrico Fermi; Richard Feynmann; Jerome Friedman; Richard Garwin; Murray Gell-Mann; Marvin L. Goldberger; Maurice Goldhaber; Stephen Hawking; Walter Heitler; Roger Hildebrand; Henry Kendall; Nevill Mott; J. Robert Oppenheimer; Paul Scherrer; Arnold Sommerfeld; Richard Taylor; Edward Teller; Victor Weisskopf; Gregor Wentzel; John

* Sara Lippincott is an editor specializing in books about science for the general public. Among authors she has edited are the science writers Timothy Ferris, John McPhee, and James Shreeve; the physicists John Barrow, Paul C.W. Davies, David Goodstein, Lawrence Krauss, Seth Lloyd, and Lee Smolin; and the evolutionary biologist Richard Dawkins. She is the editor for the Caltech Archives’ Oral History Project. Requests for reprints should be directed to Judith R. Goodstein, Institute Archives 015A-74, Caltech, Pasadena CA 91125, USA; e-mail: jrg@caltech.edu.
Valentine Louis Telegdi was born in Budapest in 1922 and grew up in Bulgaria. He took his M. Sc. degree in chemical engineering at Lausanne University in 1946 and received his doctorate in 1950 from the ETH (Eidgenössische Technische Hochschule), the Swiss Federal Institute of Technology. Victor Weisskopf and Gregor Wentzel were instrumental in his appointment as an instructor at the University of Chicago in 1951, where he worked with Murray Gell-Mann. In 1954, after Enrico Fermi's death, Telegdi became the head of Fermi's Nuclear Emulsion Group there. In 1956, he went to the Institute for Advanced Study for three months. Later that year, back in Chicago, he and Jerome Friedman found parity violation in muon decay, in parallel with the work of Chien-Shiung Wu at Columbia and her collaborators at the National Bureau of Standards, and that of Richard L. Garwin, Leon M. Lederman, and Marcel Weinrich at Columbia. In 1959-1960, on leave from Chicago, Telegdi worked with Richard Garwin at CERN on the anomalous magnetic moment of the muon. In 1966, again on leave from Chicago, he had a visiting lectureship at Harvard. In 1968, Telegdi was elected to the National Academy of Sciences and in 1972 he became the Enrico Fermi Distinguished Service Professor of Physics at Chicago. He left the university four years later – discouraged at what he called the “decay” of the Enrico Fermi Institute since Fermi's death and the increasingly cumbersome grants process – and returned to Switzerland, where he headed a group at the ETH doing atomic physics; he also took up a joint appointment at CERN, heading a particle physics group. In 1981, he began coming regularly as a visiting professor to Caltech, where he worked with (among others) Gell-Mann, Richard Feynman, and Felix Boehm. In 1991 he was awarded (along with Maurice Goldhaber) the Wolf Prize for his work on the weak interactions and in 1995 the American Physical Society's Julius Lilienfeld Prize. In 2003, he was elected a foreign member of the Royal Society. He died in Pasadena, California, on April 8, 2006, at the age of eighty-four.

The following interview was conducted in Pasadena in March 2002, as part of the Caltech Archives' Oral History Project. The first part appeared in the previous issue.

Reflections on People and Places

Lippincott: Dr. Telegdi, let's talk a little bit more about the University of Chicago, and when you got there [1951]. I'd like to hear some of your recollections of Enrico Fermi.

Telegdi: Well, Fermi [figure 1], of course, was the main attraction at the University of Chicago as far as physics was concerned. Fermi spent a fair part of the war, first at Chicago and then at Los Alamos, on the so-called Manhattan Project. But after the war, the University of Chicago made some kind of package deal involving a group of very distinguished scientists, with Fermi, Harold Urey – I’m not going to list them all. And in the space of six months or so, Chicago became what I call the mecca of physics. There was no place anywhere in the world of similar concentration of talent in physics