



NOTES

Frederick Jelinek's Obituary

Jan Hajič

Prof. Frederick Jelinek, dr.h.c., Julian Sinclair Smith Professor at the Whiting School of Engineering at the Johns Hopkins University and the director of JHU's Center for Language Speech and Processing, died unexpectedly at his workplace on Sept. 14, 2010. Prof. Jelinek is survived by his wife Milena Jelinek, professor at Columbia University, son and daughter William and Hannah, three grandchildren and his sister Susan Abramowitz.

Prof. Frederick ("Bedřich" in Czech) Jelinek was born Nov. 18, 1932 in the former Czechoslovakia; his father Vilém was a dentist in a small city of Kladno, near Prague, the capital of Czechoslovakia (now the Czech Republic). The family was half Jewish; his mother was born to Czech parents in Switzerland. Thus, during the Nazi occupation of Czechoslovakia, at the time of "Protektorat Böhmen und Mähren", 1939-1945) they experienced very difficult times, as many Jews did at the time. In 1941, they even had to leave their home city and move to Prague. His father, who had planned emigration in the early days of German rule but – tragically – decided to stay, was eventually deported to Theresin, a Jewish ghetto north of Prague. He died there because of a typhus epidemic in the last days of the World War II.

Bedřich Jelinek then entered a Czech high school. He actually had trouble getting through, due to three missing years of formal education that was stripped from him, as from many others, by various anti-Jew Nazi decrees. After 1948, when the Communists came to power following the well-known "February coup" in Czechoslovakia, his mother sagaciously decided to leave the country. One of the reasons was also that the revolutionary organization of Communist Youth would not allow her son to even take the high school graduation exam. Thanks to her Swiss origins, they were easily allowed into the United States and they settled in New York. Frederick Jelinek then started evening engineering courses at the City College of New York, despite being interested more in becoming a lawyer. However, as he also recalled in his acceptance speech of the honorary doctorate at the Charles University in Prague in 2001, he thought that his foreign accent would make him a less successful lawyer and that also

it took much longer to get the degree (and consequently to earn money for living) than in engineering. Today, we can only imagine how a good lawyer he would have been, if he were equally successful at the bar as he has been in his “forced” engineering career.

After two years at the City College, he has received a stipend from the Committee for Free Europe. As a part of the deal, he had to promise them to help rebuild Czechoslovakia once free again. Frederick Jelinek then started regular classes at MIT, where he met Claude Shannon and embarked on the study on theory of information, happy that the goal of this branch of science is “not to build physical systems”. As we know now, it was the beginnings of the information theory being applied to other branches of science. However, it was not yet applied to linguistics, even though we can trace some connections there, too: Frederick Jelinek, after he graduated in 1956 and started his doctorate in the same field, was often talking to Roman Jakobson, a Russian linguist with close ties to Czechoslovakia, who worked at both Harvard and MIT. Jakobson also arranged for a stipend for Frederick Jelinek’s wife, Milena, to study at Noam Chomsky’s department once she was allowed out of Czechoslovakia in 1961 as a measure of “friendship” of the Czechoslovak government to John F. Kennedy after he was elected U.S. president. After he got his Ph.D. from MIT, Frederick Jelinek joined Cornell University as a professor. He already wanted to start pursuing the connection between linguistics and information theory there, but the professor who was supposed to work on this topic with him there pulled out of the field.

The turning point came in 1972, ten years after he joined Cornell: as part of his unpaid 3 months as a professor, he accepted a position at IBM T. J. Watson Research Center in Yorktown Heights in New York. IBM was then starting to look into the speech recognition problem, and after the sudden departure of the group manager, they offered the position to him. Frederick Jelinek then stayed at this “temporary” position for two years, after which he had to leave Cornell completely but he kept his IBM position. He was the head of the Speech group for the next 19 years, the years that changed the field of computational linguistics the most in its entire history.

The IBM speech group, first located in Yorktown and then in Hawthorne, New York, consisted of almost no linguists: rather, the researchers had been educated either in engineering, information theory, or in physics. They were thus skeptical to the linguistic experts who were devising speech recognition systems at that time. As Frederick Jelinek recalls, the key to their success was probably their “naïve approach to this problem”. They threw all the then-current methods out and started from scratch, applying information theory, statistical methods and machine learning to the speech recognition problem and later to machine translation. After almost twenty years since then, we now know the results of this “naïve” approach – they have not been surpassed yet. Moreover, all commercial large vocabulary speech recognizers now on the market use these methods with only relatively minor modifications.

In 1993 Frederick Jelinek joined Johns Hopkins University in Baltimore, Maryland, and became the director of the Center for Language and Speech processing at the

Whiting School of Engineering. While at Johns Hopkins University, he was awarded many NSF, DARPA and other grants. Among them, there was a series of grants that stands out: the grants for the organization of the now famous (and often emulated) JHU Summer Workshop (officially, the “Workshop on Language Engineering for Students and Professionals Integrating Research and Education”). It is an 8-week (including two weeks of a Summer School for undergraduate students selected world-wide) labor-intensive event, where carefully peer-selected projects are being worked on by two to four teams of professors, researchers, graduate and undergraduate students. It is hard to find a well-known researcher in the field of speech recognition or computational linguistics who has not been there at least once during her or his career.

After 1989, the year of the fall of the Berlin Wall and the political changes in Czechoslovakia (also known as the “Velvet Revolution”), he started paying off his promise to his MIT stipend Committee: he started to visit Czechoslovakia (then Czech Republic) often, and invited first Czechs to his IBM team to work on both speech recognition and machine translation. The author was the first one to do so, soon followed by several others, who are now working at IBM or the academia both in the Czech Republic and in the U.S. He also taught in Prague, both at the Charles University and at the Technical University. He arranged for a gift to the Technical University in Prague, and then helped to get his managers to agree to keep part of the Watson speech recognition and development team in Prague, where they reside until today. He also collaborated with Charles University later, inviting professors, postdocs, and students in various capacities to his new place of work after he had joined the Johns Hopkins University in 1993. In 2001, he spent his sabbatical year in the Czech Republic, working and lecturing at the Institute of Formal and Applied Linguistics, which is part of the Computer Science School of Charles University in Prague. At that time, he also received his honorary doctorate from Charles University. He was then coming often to visit conferences, for example the “Text, Speech and Dialog” (TSD) conference organized jointly by the University of West Bohemia in Pilsen and the Masaryk University in Brno, of which he was the honorary chairman of the organizing committee. He continued teaching intensive courses in speech recognition at Charles University and elsewhere, and he was also sending his students to spend some time in Prague under the NSF PIRE project he headed. Recently, he also started intensive collaboration with the Technical University in Brno, also in the Czech Republic.

We in Prague talked to him, regretfully only very briefly, just before his return from the TSD conference back to Baltimore this past September. No one knew at the moment that there are only three more days left for him in this world. No one could imagine that we (or anybody else) will never see him or talk to him again. I am afraid that I cannot fully imagine it even today.

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