

1944



The US infantry advanced as far as Nijmegen in the Netherlands under heavy attack from the occupying German forces.

1946



Women clearing up the debris after bombs had completely destroyed the town of Hanau. The monument commemorating the Brothers Grimm remained intact.

1950



The French painter, Henri Matisse, designed by St. Dominic for his chapel in St. Paul de Vence.

1952



At the height of the Cold War the United States tested "Mike", the world's first hydrogen bomb, on the Enewetak atoll off the Marshall Islands.

1955



Black and white TVs for every (well-off) household flooded the market. Scientists were hard at work on the colour TV set.

_studies and early career

In 1950 Fritz Bauer creates his "Stanislaus" designed for propositional formulae typed in the Polish parenthesis-free notation. In 1955 he and Klaus Samelson develop the stack method of expression evaluation.

In 1952 Grace Hopper, while she is working for the Remington Rand corporation, develops the first compiler for a computer programming language, A-1.

In 1953 IBM ships its first electronic computer, the 701. In the same year, Backus (who provides us the Backus-Naur form) completes his speed-coding for IBM's 701 computer.

When Dahl (1949), Dijkstra (1948) and Nygaard (1945) began their respective university studies, Computing Science as a discipline did not yet exist. Dahl and Nygaard studied Mathematics at the University of Oslo, Dijkstra Theoretical Physics at the University of Leiden. Dahl's decision was obvious, because he showed great talent for mathematics. Nygaard's decision was based on interest and on his contact to Jan W. Garwick. Dijkstra's decision was a bit more difficult; he had to choose between Theoretical Physics and Mathematics, and he

"...decided that if I didn't study physics at the university, I would never do it. I felt that mathematics would look after itself."

All three worked alongside their studies: Dahl had a part-time job at the Institute of Defense Research in Oslo and after finishing his Master's Degree in Numerical Mathematics he started working there full-time. Dijkstra worked part-time at the Computation Department of the Mathematical Centre in Amsterdam. After finishing his Master's Degree in Mathematics and Theoretical Physics he assumed a full-time position there. Kristen Nygaard worked full-time during his studies and then afterwards until 1960 at the Norwegian Defense Research Establishment, NDRE.

All three benefited, in their early career years, from key individuals. For Dijkstra this was his supervisor, the director of the computation department in Amsterdam, A. van Wijngaarden. Dijkstra, studying Theoretical Physics at the University of Leiden and working part-time for van Wijngaarden, and finding the two activities hard to combine recalls:

"I had to make up my mind, either to stop programming and become a real, respectable theoretical physicist, or to carry my study of physics to a formal completion and to become..., yes what? A programmer?"

But was that a respectable profession?... Where was the sound body of knowledge that could support it as an intellectually respectable discipline?" He sought out van Wijngaarden who explained quietly that "automatic computers were here to stay, that we were just at the beginning and could not I be one of the persons called to make programming a respectable discipline in the years to come? This was a turning point in my life and I completed my study of physics formally as quickly as I could. One moral of the above story is, of course, that we must be very careful when we give advice to younger people: sometimes they follow it!"

Dahl and Nygaard began work at the NDRE under the leadership of Jan V. Garwick, the founding father of Norwegian informatics. Garwick was brilliant in programming and mathematics but he was interested neither in experiments nor in the collection of data to gain access to analyzed systems. Fortunately, he was happy when others took care of such issues.

Nygaard began his military service at the NDRE in 1948 as assistant to Garwick, with the task of carrying out resonance absorption calculations related to the construction of Norway's first nuclear reactor. In 1949-50 "manual" Monte Carlo simulation methods were successfully introduced as an alternative to traditional numerical techniques. This engagement was later on one starting point for developing the Simula programming language.

Dahl, also in the military, joined the NDRE in 1952. From the beginning he was confronted with computer technology. In the late fifties, when NDRE started work in language design, Dahl, working under Garwick, was particularly active in this area and the experience turned out to be an important influence on the Simula development.

