

# Loll Rolling, Europe's information transfer specialist



By nationality Loll Rolling is Luxembourgian, having been born in the Grand Duchy of Luxembourg to Luxembourgian parents during the inter-war years. He went to the Luxembourg Athenaeum school in the 1940s, followed by a physics and mathematics course and metallurgy studies at the University of Liege. His first job was as an engineer working for the blast furnace company ARBED (Acieries Reunies de Burbach, Eich and Dudelange).

Despite this technical background, however, Mr Rolling had linguistic knowledge from the start. Like every Luxembourgian he knew French and German as well as the local Letzeburgish, and he had also learned English; he subsequently obtained the Cambridge Lower English Certificate. One of the early sources of language learning was films; in Luxembourg in the post-war years many foreign films were not dubbed, and Loll Rolling saw many English and American films. He also learned a modicum of Italian from watching undubbed Italian films, and he now has, in addition to fluency in French, German and English, some knowledge of Italian, Spanish and Dutch.

In 1957 Mr Rolling went to the Cobalt Information Centre in Brussels, as engineer in charge of research and publication, and it was there he became closely involved in the problems of information transfer. In 1960 he joined EURATOM as a scientific officer, and was given the task of designing and managing a system of information in the field of nuclear energy. With something like 100,000 documents a year being produced by a considerable number of research centres, there was a crying need for finding ways of processing all this information.

On one visit to the United States Mr Rolling visited ten information

centres in 14 days, and was particularly impressed by the Defence Documentation Centre in Arlington, and by General Electric's establishment in Cincinnati.

His work resulted in 1964 in the creation of the European nuclear documentation system, with its own thesaurus, the first to use the technique of graphic display of terms and their interrelationships, a technique which was found to be suitable for adaptation to many other fields. A conference paper he gave at this period in Elsinore, *The role of graphic display of concept relationships in indexing and retrieval vocabularies, including a thesaurus of documentation terms* set out the basis principles of this.

When the International Atomic Energy Agency in Vienna wanted to build an information system of their own, they arranged for Mr Rolling to come to them on short-term secondment. Mr Rolling remembers this as a fascinating time, as a member of an international working group, working with two Russians, one American, one Englishman and one West German, with the Russians very eager to learn about research in the West. The result was the International Nuclear Information System (INIS), which adopted the thesaurus and software pioneered at EURATOM.

On his return from Vienna Mr Rolling was appointed head of the Information technology division of the Commission of the European Communities. One of the early products was an information system for metallurgy, with the first multilingual thesaurus, in French, English, German and Italian.

The problem of a multiplicity of information systems and data bases in various languages was a preoccupation, and led on the one hand to the creation of Euronet, a Community-wide network linking up data bases and their potential users, under the responsibility of Garth Davies, now its head, and Piet van Velze; and on the other hand to development of computer-assisted multilingual information transfer.

Since 1974 Mr Rolling's position has been that of head of the division responsible for the transfer of information between the languages of the European Communities, part of Directorate General XIII, based in the complex of European institution buildings on the outskirts of the city of Luxembourg.

Much of his current work is involved in helping the European Communities institutions solve their language problems. One aspect of this is terminology activity, while another involves work in the field of machine translation. Between 1973 and 1977 he was much involved in the organisation of three major conferences, the first in 1973, on information systems, the second on information networks, and the third, in 1977, on overcoming the language barrier, all of which gave a considerable impetus to research and experiment in these fields.

The Communities have been experimenting with machine translation since about 1978, and the experience eventually led to the EUROTRA project. Most existing machine translation programmes are based on translation directly between language pairs, but this is inadequate for the European Communities, where, after the accession of Spain and Portugal, there will be 72 possible language pairs. EUROTRA will tackle the problem by providing for translation from the nine Community languages into an "interlingua", and out from this to the target language. The interlingua is a software module which carries out the language transfer and which acts as an interface between analysis and synthesis. The Eurotra project began in January 1983, and is now at the mid-term point. Linguistic analysis is being carried out by research teams in national language centres in the member countries, and some research teams are keeping abreast of their schedule while others, inevitably, are lagging behind. However, by the end of 1986 it is hoped to have a small prototype system with a corpus of some 20,000 words tackling unambiguous texts

The Communities are also experimenting with the Systran machine translation system, in a project headed by Ian Pigott. There was a lot of work involved in the earlier days getting the Systran system accepted by the translation department, but now it is a working system in use every day, with texts being sent electronically backwards and forwards between Luxembourg and a computer establishment in Ireland.

A current preoccupation of Mr Rolling is the amount of technical information being generated in Japan which is not being captured in the West. It is estimated that the Japanese have access to 16 times more European information than Europeans have to Japanese information. Investigations are currently in progress into means of using machine translation to overcome this important language barrier. One offshoot of this preoccupation was the Chantilly conference which looked at the exchange of information between Europe and eastern languages.

Outside his many-sided work for the Commission Loll Rolling has many other interests. He is an accomplished table tennis player, and president of the Commission

Ping-Pong Club; he has a wide-ranging collection of science fiction books; and he is a past president of the Luxembourg Kiem Rotary Club. Humour is another interest, and in his flat in Luxembourg he has drawers full of funny stories and clippings of examples of humour. The mechanics of laughter is something he has tried to define, in a *classification zygomatique universelle*.

Such leisure interests, however, pale into insignificance besides Loll Rolling's main interest outside working hours. This is in what is called international conflict resolution. Many people, from time to time, are concerned at the future of mankind, but the problem, when they do spare it a thought, seems too vast for individual action to be effective. Peter Toma, originator of Systran, and therefore something of a founding father of machine translation, is a leading proponent of the concept of international conflict resolution, and Loll Rolling fully shares his conviction that individual efforts can count in the efforts to avoid a third world war.

An institute of international conflict resolution is being established in Dunedin, New Zealand, with the objective of making scientific and objective assessments of how conflict could be resolved. Loll Rolling has written articles on *La fin du monde* for an international Rotary publication and for one of Luxembourg's leading newspapers, *Le Républicain Lorrain*, showing how the human race could be swept into oblivion. Conflict, it is very likely, could break out before the end of the century, and it is necessary now to work out how it could be prevented, perhaps by some recognised international arbiter.

In Vienna in 1968 Loll Rolling caught a glimpse of international politics, and even espionage, in operation, and also became aware of how a chain reaction of events in a nuclear age could lead to disaster. Perhaps being the citizen of a small country helped him to realise that individual effort could be effective; in Luxembourg it is possible to make the acquaintance of every member of parliament, and for private initiatives and individual lobbying to be effective.

Loll Rolling, then, is a man of eclectic interests, an *homo universalis*, both a theorist and a doer, and none could be better qualified to be in charge of information exchange between the communities which make up the Europe of the late 20th century.