

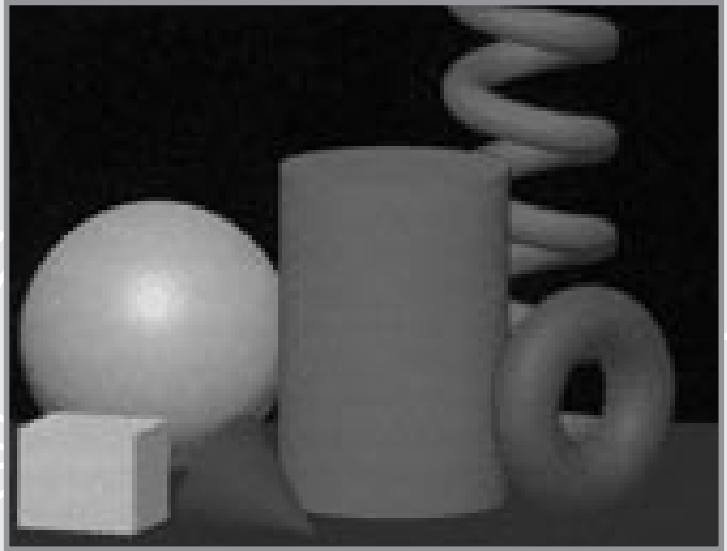
First International Congress on Tools for Teaching

by Jan van Eijck

In June 2000, the First International Congress on Tools for Teaching Logic took place in Salamanca, Spain. This congress, organized by professor Maria Manzano from the University of Salamanca, brought logicians from Europe, the US and South America together to compare tools and methods of state-of-the-art logic teaching.

Maria Manzano is the coordinator of Aracne, a network of South American academic centers that was set up for exchanges in the area of academic education, and strengthening this network was one of the aims of the conference.

Dutch dissemination of logic was quite strongly represented at the conference, with Dick de Jongh, Jan Jaspars, Raffa Bernardi, Richard Moot, Jan van Eijck and Josje Lodder as speakers. Dick gave a in-depth analysis of advantages and disadvantages of various approaches to logic that can be taken in a first course: tableaux, sequents, natural deduction, Hilbert calculi, resolution and CNF/DNF rewriting. (His current favorite is resolution.) Jan Jaspars presented his growing arsenal of tools for illustrating key concepts of logic, to general acclaim of the audience. Raffa gave an eloquent account of her experience with teaching categorial grammar to Italian secondary school students, using the Grail system developed at Utrecht University. Grail itself was presented at the conference by Richard Moot. Jan van Eijck reported on the new ILLC course 'reasoning and computation' ('structuren van de informatica') where first steps in logic



and reasoning are combined with and applied to functional programming. Josje Lodder gave an overview of the logic teaching activities of the Dutch Open University.

John Etchemendy, master logic toolsmith from Stanford, was present to tell us the latest news about Turing's World, Tarski's World, Hyperproof, and their ilk. The latest news is that the Stanford logic toolbuilding industry is still losing money, according to John because too many students use illegal copies of the software, and that Stanford has decided to stop funding the toolbuilding enterprise.

Many of the other contributions focussed on various tools for logic teaching, most of them based on tableaux. The Aracne connection brought in a large South American attendance, with contributions from Brazil, Mexico, Venezuela, Argentina, and Uruguay. In the course of the conference we learned about the great enthusiasm for logic teaching in a part of the world that we still have relatively little contact with. It also became quite clear that the main language of Latin academia is Spanish, and some of the speakers felt rather ill at ease with English. During after-conference hours, when the international audience was finding its way in the restaurants and bars of Salamanca, the roles were reversed.

Logic

Salamanca is a university town of long standing, several centuries older, in fact, than even its oldest Dutch counterpart, and the surroundings of the conference were truly stunning. The conference dinner, for instance, took place in the historic former palace of the Archbishop of Fonseca. It opened with classical guitar music, and was concluded by community singing with flamenco accompaniment. When the flamenco guitarist took his leave, Dick de Jongh was suddenly addressed in Spanish by the maestro as *un hombre muy simpatico*, whose appreciating attitude during the concert – Dick had been in the first row – asked for this spontaneous acknowledgement. When the two men were shaking hands it struck at least some members of the audience that Dick himself would not look the least out of place as a member of a flamenco orchestra.

In the enthusiasm of the moment, Dick de Jongh and Jan van Eijck volunteered to organize a follow up conference in Amsterdam, perhaps in a few years time. As became clear during the conference, rapid and exciting changes are taking place in the area of logic teaching, and it seems worth while to monitor this development. But it is surely going to be hard to beat our Salamanca hosts for hospitality.



In 2000, these matters were pursued along a number of concrete lines, organized in two streams: Computing with Logic, and Computing with Language and Information. The Computing with Logic stream provides a natural setting for the group's focus on content, and, especially, for investigating the balance between representations of content and methods for manipulating content. One of the main foundational issues here is to determine how the expressive power of a description formalism is related to the computational costs of performing reasoning tasks within the formalism. Carlos Areces completed his PhD dissertation, which is partly based on joint work with Blackburn and Marx, and which includes an extensive analysis of the expressive power of so-called description logics in terms of hybrid logics; together with De Rijke, he analyzed reasoning with various kinds of knowledge bases in a variety of such logics.

The year 2000 witnessed a further increase in the group's emphasis on experimental evaluations of reasoning methods. Supervised by Van Benthem and De Rijke, Ó Nualláin studied statistical phenomena in the area of propositional satisfiability checking. In particular, his work deepened our understanding of so-called restart strategies and made a number of interesting discoveries concerning runtime distributions of Davis-Putnam algorithms. Areces, Gennari, Heguiabehere and De Rijke developed, implemented, and evaluated new translation-based reasoning methods for modal logic, based on syntactic encodings of the tree model property. Together with Ohlbach, Nonnengart and Gabbay, De Rijke wrote a state-of-the-art survey of translation-based reasoning methods for modal logic for the *Handbook of Automated Reasoning*.