SUMMER 1987 No. 62
QUARTERLY NEWSLETTER OF THE SOCIETY FOR THE STUDY OF ARTIFICIAL INTELLIGENCE & SIMULATION OF BEHAVIOUR

CURRENT EUROPEAN RESEARCH IN COMPUTATIONAL LINGUISTICS

A personal view of the Association for Computational Linguistics European Chapter Conference, Copenhagen, April 1st-3rd 1987

Eric Steven Atwell,
Department of Computer Studies,
Leeds University

The Gods tried hard to prevent my attendance at the ACL European Chapter conference. Before leaving, my wife, my dog and I independently developed illnesses; I had to rush one to the vet just before leaving for the airport. I just made it into Copenhagen airport before atrocious weather closed it. My hotel was in the *Sailors' Entertainment* district; the receptionist suggested it would be safest to stay indoors! At least I would not be distracted from the serious business.

The Conference began with Fr. Hacker's paper, the Opening Address, and two Invited Papers from Laurence Danlos and Martin Kay. The research papers, starting in the afternoon, split into parallel sessions. My first April Fool's Day research paper was *How to Detect Grammatical Errors in a Text Without Parsing It* by yours truly in a stunning yellow outfit. This paper claimed that CLAWS, a system which computes a part-of-speech analysis without finding constituent-structure parse-trees, can be used to flag grammatical infelicities in English text.

Wolfgang Menzel's following paper discussed an intelligent tutoring system which detects and corrects student's responses to simple questions; this more 'traditional' AI system deals with a very restricted subset of English, whereas the former copes with Unrestricted English texts. Next came the first IBMer: Luis de Sopena presented the integrated environment for composing and proofreading Spanish documents developed at the IBM Madrid Scientific Centre, based on an analogous

glish system from IBM Yorktown Heights. One point by is brought to mind recent debate in the AISBQ on ethical d moral issues: "Languages other than English have received le attention". Now there's a cause the egalitarian AISB uld sponsor!

The next presentation, again by yours truly (co-authored th Nicos Drakos) was more theoretical, about pattern ognition techniques to extract a grammar from text. Then ther IBMer, from Rome: Paolo D'Orta described their lian speech recognition system, based on the English tem built at Yorktown Heights by Fred Jelinek's R&D m. One beauty of their statistical approach is that the hnique applies straightforwardly to any language. There was ink at the front of the room; as Paolo spoke, a plumber zenly walked up and started to unscrew it, but Paolo ntinued unwavering! Ute Ehrlich's following talk described EVAR speech understanding system. It used 'conventional' pragmatic/semantic modelling, in contrast to the IBM tem, which incorporates only word-trigram probabilities; l EVAR's 200 'concepts' contrasted with IBM's 6500-word tionary. The final presentation of the day was due to be m Alex Martelli, another IBMer from Rome, but he didn't w; perhaps even IBM has a limited Conference budget?

The next morning, Mary McGee Wood opened with a paper dictionary organisation. Next came a couple of papers monstrating that Computational Linguistics thrives behind Iron Curtain, from Petr Sgall and Eva Hajicova from ague, Czechoslovakia. Petr expounded on dependency mmar. From Eva's title, *Fail-soft (emergency) Measures a Production-oriented MT System*, I was half-expecting tails of how the Czechs plan to avoid disaster in the event of ire in the University computing centre. In fact, "emergency asures" turned out to be things like default subroutines for ping with input words not found in the dictionary.

Next, Henrik Rue presented a Danish field grammar plemented in Borland Turbo-Prolog. Henrik ended his talk th a few 'inconclusions'; I wish more researchers could be as listic. Thierry Guillotin's talk on Unification Categorial ammar also described a theoretical model rather than an plication. The day closed with some papers peripheral to mputational linguistics, by Dagmar Schmauks, Jean-ilippe Solvay, and Marie Bienkowski.

In the evening there were various demos. I thought that ary Neff's presentation of the Wordsmith system (developed Yorktown Heights, but mounted on IBM Denmark's inframe for the demo to cut the phone bill) was more pressive than many of the mainstream papers. This system orporates several published dictionaries, and Mary said y're still looking for more.

Bill Black opened next morning by discussing how we ght automatically convert NL descriptions into conceptual ta models. So far, his ideas are theoretical, not yet plemented; in contrast, the talk by Paola Velardi was an position of a large, sophisticated computer system for derstanding text and converting sentences into an internal knowledge representation formalism, developed at IBM Rome Scientific Centre. The system has been extensively tested on a corpus of Italian press releases, extracting from each article a pragmatic/semantic representation of the information encapsulated in the Italian text. We then returned to theoretical discussion: Ted Briscoe compared techniques for deterministic parsing.

During the coffee break, I was approached by a young lady from a glamorous international software house, who said her Managing Director wanted to meet me over lunch to discuss commercial exploitation of my research. Thoughts of jetting to California distracted me during Kari Valkonen's description of a parser for Finish and Mats Wiren's discussion of how to choose an efficient rule-invocation strategy in context-free chart parsing. Mats tested out eight different strategies with a small grammar of less than 40 rules, and found the difference in parsing speed between the fastest and slowest strategies was a factor of about four; I was left wondering if it was really worth all the effort, given that hardware power and speed are increasing rapidly all the time (IBM had just announced their PS/2 range).

My lunch meeting turned out to be a Danish Pastry and coffee; I guess I had to eat at least one while in Copenhagen! I got back to hear Jean-Louis Binot's description of a part-of-speech analyser for French, which in parts sounded uncannily reminiscent of the CLAWS part-of-speech analyser for English. Then it was time to leave for the airport; with all my problems waiting for me back home, I daren't risk missing my plane!

BOOKS RECEIVED

The following books have been received and are available for review:

von der Lieth Gardner, A. "An Artificial Intelligence Approach to Legal Reasoning" MIT Press 1987

Agha, G. "Actors: a Model of Concurrent Computation in Distributed Systems" MIT Presss 1987

Barton, G.E., Berwick, R.C. and Ristad, E.S. "Computational Complexity and Natural Language" MIT Press 1987

Mulmuley, K. "Full Abstraction and Semantic Equivalence" MIT Press 1987