nominals seem to be quite rare. This is probably because of a principle that says noun modifiers should further restrict the possible reference of the noun phrase, and parts are common to too many wholes to perform that function.

(3) A knowledge base contains two kinds of knowledge, "type" knowledge about what kinds of situations are possible, and "token" knowledge about what the actual situation is. We are trying to determine which of these kinds of knowledge are required for each of the pragmatics problems. For example, reference requires both type and token knowledge, whereas most if not all instances of metonymy seem to require only type knowledge.

(4) At the most abstract level, interpretation requires the constructive proof of a single logical expression consisting of many conjuncts. The deduction component can attempt to prove these conjuncts in a variety of orders. We have been investigating some of these possible orders. For example, one plausible candidate is that one should work from the inside out, trying first to solve the reference problems of arguments of predications before attempting to solve the compound nominal and metonymy problems presented by those predications. In our framework, this is an issue of where subgoals for the deduction component should be placed on an agenda.

IMPLEMENTATION

In our implementation of the TACITUS system, we are beginning with the minimal approach and building up slowly. As we implement the local pragmatics operations, we are using a knowledge base containing only the axioms that are needed for the test examples. Thus, it grows slowly as we try out more and more texts. As we gain greater confidence in the pragmatics operations, we will move more and more of the axioms from our commonsense and domain knowledge bases into the system's knowledge base. Our initial versions of the pragmatics operations are, for the most part, fairly standard techniques recast into our abstract framework. When the knowledge base has reached a significant size, we will begin experimenting with more general solutions and with various constraints on those general solutions.

FUTURE PLANS

In addition to pursuing our research in each of the areas described above, we will institute two new efforts next year. First of all, we will begin to extend our work in pragmatics to the recognition of discourse structure. This problem is illustrated by the following text:

> Air regulating valve failed.
> Gas turbine engine wouldn't turn over.
> Valve parts corroded.

The temporal structure of this text is 3-1-2; first the valve parts corroded, and this caused the valve to fail, which caused the engine to not turn over. To recognize this structure, one must reason about causal relationships in the model of the device, and in addition one must recognize patterns of explanation and consequence in the text.

The second new effort will be to build tools for domain knowledge acquisition. These will be based on the abstract machines in terms of which we are presently encoding our domain knowledge. Thus, the system should be able to allow the user to choose one of a set of abstract machines and then to augment it with various parts, properties and relations.

REFERENCE

Hobbs, Jerry R.; Croft, William; Davies, Todd; Edwards, Douglas; and Laws, Kenneth 1986 Commonsense Metaphysics and Lexical Semantics. In *Proceedings, 24th Annual Meeting of the Association for Computational Linguistics.* New York (June): 231-240.

CALLS
FOR PAPERS, PROPOSALS, AND PICTURES FOR AWARD NOMINATIONS

CALL FOR PAPERS
FOURTH SYMPOSIUM ON EMPIRICAL FOUNDATION OF INFORMATION AND SOFTWARE SCIENCES (EFISS)

22-24 October 1986, Georgia Institute of Technology, Atlanta, Georgia

The purpose of the meeting is to explore subjects and methods of scientific inquiry of common interest to information and software science, and to identify directions of research that will benefit from the mutual interaction of the two fields. The main theme of this symposium is **empirical methods of evaluation of man-machine interfaces.**

Specific examples of relevant focal topics are: friendliness, portability, sensitivity, fidelity, integrity, fault-tolerance, compatibility, modularity, and evolution of man-machine interfaces; efficiency of interfaces as communication channels; evaluation of effects of error propagation through interfaces; modeling man-machine interfaces.

Contributed papers will be considered also on other aspects of empiric foundations of information and software sciences such as methods of experimental design; measurement theory and techniques; empirical laws and theories of information and software sciences; their validation and verification; experimental data bases; and software properties and their evaluation and measurement.

All submitted papers will be refereed. Those selected will be scheduled for presentation and published in the proceedings of the symposium.

Abstracts of papers (at least 150 words long) are due by **15 March 1986.** Authors will be notified of their

acceptance by 15 April 1986. The deadline for submission of **full papers,** together with photo-ready copies of artwork and program listings, if any, is **1 August 1986.**

The symposium is sponsored jointly by the Georgia Institute of Technology and the US Army Institute for Research in Management Information, Communications, and Computer Sciences (AIRMICS). All inquiries and other correspondence regarding the symposium should be addressed to

> Prof. Pranas Zunde
> EFISS Symposium Organizing Committee
> School of Information and Computer Science
> Georgia Institute of Technology
> Atlanta, GA 30332

Proceedings of the Second Symposium on Empirical Foundations of Information and Software Sciences, held 3-5 October 1984, can be ordered from the publisher:

> Plenum Publishing Corporation
> 233 Spring Street
> New York, NY 10013

CALL FOR PAPERS

THIRD CONFERENCE OF THE EUROPEAN CHAPTER OF THE ASSOCIATION FOR COMPUTATIONAL LINGUISTICS

1-3 April 1987, Copenhagen University, Denmark

PURPOSE: This conference is the third in a series of biennial conferences on computational linguistics sponsored by the European Chapter of the Association for Computational Linguistics. It was preceded by meetings in Pisa (September 1983) and in Geneva (March 1985). Although regional in organizational structure, these conferences are global in scope and participation.

SCOPE: Papers are invited on all aspects of computational linguistics, including, but not limited to:
- morphology;
- lexical semantics;
- computational models for the analysis and generation of language, spoken and written;
- computational lexicography and lexicology;
- syntax and semantics;
- machine translation and translation aids;
- natural language interfaces, knowledge representation, and expert systems.

SUBMISSION: Authors should send seven copies of a 5- to 8-page double-spaced summary to the Programme Committee Chairperson:

> Bente Maegaard
> Institut for Anvendt og Matematisk Lingvistik
> Kobenhavns Universitet
> Njalsgade 96
> DK-2300 Kobenhavn S, DENMARK
> (+45 1) 542 211

It is important that the summary identify the new ideas in the paper and clearly indicate to what extent the work

is complete and to what extent it has been implemented. It should contain sufficient information to allow the programme committee to determine the scope of the work and its relation to relevant literature.

SCHEDULE: **Summaries** must be submitted by **15 November 1986.** Authors will be notified of **acceptance** by **1 February 1987.** Camera-ready copies of **final papers** prepared in a double-column model paper format must be received by **3 April 1987,** that is, at the end of the Conference, along with a signed copyright release statement. The Proceedings will be published after the Conference.

EXHIBITS AND DEMONSTRATIONS: A program of exhibits and demonstrations is planned. Anyone wishing to participate is asked to contact Bente Maegaard.

CALL FOR PAPERS

25TH ANNUAL MEETING OF THE ASSOCIATION FOR COMPUTATIONAL LINGUISTICS

6-9 July 1987, Stanford University, Stanford, California

TOPICS OF INTEREST: Papers are invited on substantial, original, and unpublished research on all aspects of computational linguistics, theoretical or applied. Papers that demonstrate the power of a technique for computational purposes or present new ideas together with a comparison and evaluation of their implications for current research are particularly welcomed. The following topics are illustrative:

> phonology, morphology, the lexicon, syntax, semantics, discourse, pragmatics; parsing and generation; language understanding; knowledge representation; speech acts and planning; language interfaces; language acquisition; speech analysis and synthesis; information and document retrieval; computational, mathematical, and psychological models; programming strategies; computer architectures.

REQUIREMENTS: Papers should describe unique work that has not been submitted elsewhere; they should emphasize completed work rather than intended work; and they should indicate clearly the state of completion of the reported results.

FORMAT FOR SUBMISSION: Authors should submit ten copies of an extended abstract not to exceed eight double-spaced pages (exclusive of references) in a font no smaller than 10 point (elite). The title page should include the title, the name(s) of the author(s), complete addresses, a short (5 line) summary, and a specification of the topic area. Submissions that do not conform to this format will not be reviewed. Send to:

> Candy Sidner, ACL-87 Program Chair
> BBN Laboratories Inc.
> 10 Moulton Street
> Cambridge, MA 02238, USA

(+1 617) 497-3566
sidner@g.bbn.com

SCHEDULE: **Extended abstracts** must be received by **12 January 1987.** Authors will be notified of **acceptance** by **2 March 1987.** Camera-ready copies of **final papers** prepared in a double-column model paper format must be received by **30 April 1987,** along with a signed copyright release statement.

OTHER ACTIVITIES: Special events will signal the 25th Anniversary of the ACL. The meeting will also include a program of applied tutorials and a variety of exhibits and demonstrations. Anyone wishing to arrange an exhibit or present a demonstration should send a brief description together with a specification of physical requirements (space, power, telephone connections, tables, etc.) to

>Paul Martin
>SRI International
>Menlo Park, CA 94025, USA
>(+1 415) 859-4480
>pmartin@sri-ai.arpa.

CONFERENCE INFORMATION: Local arrangements are being handled by

>Doug Appelt
>SRI International
>Menlo Park, CA 94025
>(+1 415) 859-6150
>appelt@sri-ai.arpa

For other information on the conference and on the ACL more generally, contact

>Don Walker (ACL)
>Bell Communications Research
>445 South Street, MRE 2A379
>Morristown, NJ 07960
>(+1 201) 829-4312
>walker@mouton.bellcore.com
>or walker%moutonrelay.cs.net
>or bellcore!walkencbvax.berkeley.edu.

LSA SUMMER LINGUISTIC INSTITUTE: ACL-87 will be preceded and followed by the 54th LSA Institute at Stanford University, which will be co-sponsored by the ACL and the AAAI. Computational linguistics will be the major focus for the Institute. The week preceding the 25th Annual Meeting will feature ten 8-hour courses that can be taken by ACL members as tutorials. For more information, contact

>Ivan Sag
>Department of Linguistics
>Stanford University
>Stanford, CA, 94305, USA
>(+1 415) 723-4284
>institute@su-csli.stanford.edu.

The Logic and Linguistics Conference (see following Call for Papers) will be held at Stanford following ACL-87.

10-11 July 1987, Stanford University, Stanford, California

The organizing committee of this conference on theoretical interactions of linguistics and logic, sponsored by the Association for Symbolic Logic and the Linguistic Society of America, is soliciting abstracts in three categories:

1. Contributed abstracts of at most 300 words for 15 minute presentations;
2. Contributed abstracts of at most 1000 words for 40 minute presentations;
3. Suggestions for symposia.

Suggestions for symposia are due **1 February 1987,** and **abstracts** are due **1 March 1987.** All communications should state whether the authors are members of the LSA or the ASL, and should be sent to

>ASL/LSA 87
>Richmond H. Thomason
>Linguistics Department
>University of Pittsburgh
>Pittsburgh, PA 15260
>netmail: thomason@c.cs.cmu.edu.ARPA

CALL FOR PAPERS
IJCAI-87

TENTH INTERNATIONAL JOINT CONFERENCE
ON ARTIFICIAL INTELLIGENCE

23-28 August, 1987, Milan, Italy

The IJCAI conferences are the main forums for the presentation of artificial intelligence research to an international audience. The goal of IJCAI-87 is to promote scientific interchange, within and between all subfields of AI, among researchers from all over the world. The conference is sponsored by the International Joint Conferences on Artificial Intelligence, Inc. (IJCAII).

In response to the growing interest in engineering issues within the AI community, IJCAI-87's Technical Program will have two distinct tracks: science and engineering. The science papers, presented Sunday through Wednesday (23-26 August), will stress the computational principles underlying cognition and perception in man and machine. The engineering papers, presented Tuesday through Friday (25-28 August), will highlight pragmatic issues that arise in applying these computational principles. Tutorials will be presented on Sunday and Monday in parallel with the first two days of the science paper presentations. Meetings or workshops focussed on specific research issues might most appropriately be held on Thursday or Friday.

TOPICS OF INTEREST

Authors are invited to submit papers to either the science or engineering tracks within one of the following topic areas:

- Architectures and Languages (including logic programming, user interface technology)
- Reasoning (including theorem proving, planning, explaining)
- Knowledge Acquisition and Learning (including knowledge-base maintenance)
- Knowledge Representation (including task domain analysis)
- Cognitive Modeling
- Natural Language Understanding
- Perception and Signal Understanding (including speech, vision, data interpretation)
- Robotics

REQUIREMENTS FOR SUBMISSION

Authors are requested to prepare full papers, no more than 7 proceedings' pages (approximately 5600 words), or short papers, no more than 3 proceedings' pages (approximately 2400 words). The full-paper classification is intended for well-developed ideas, with significant demonstration of validity, while the short-paper classification is intended for descriptions of research in progress. Authors must ensure that their papers describe original contributions to or novel applications of AI, regardless of length classification, and that the research is properly compared and contrasted with relevant literature.

DETAILS OF SUBMISSION

Authors should submit six (6) copies of their papers (hard copy only – we cannot accept on-line files) to the Program Chair *no later than Monday, 5 January 1987*. The following information must be included on the title page:
- Author's name, address, telephone number, and computer mail address (if applicable)
- Paper type (full-paper or short-paper), topic area, track (science or engineering), and a few keywords for further classification within the topic area
- An abstract of 100-200 words
  The timetable is as follows:
- **Submission deadline: 5 January 1987**
  (papers received after 5 January will be returned unopened)
- **Notification** of acceptance or rejection: **17 March 1987**
- **Camera ready copy due: 10 April 1987**
The language of the conference is English; all papers submitted should be written in English.

REVIEW CRITERIA

Each paper will be reviewed by at least two experts. Acceptance will be based on the overall merit and significance of the reported research, as well as on the quality of the presentation. A paper may be reviewed by experts responsible for an area or track other than the one to which it was submitted if, in the opinion of a program committee member, it can thereby be more fairly reviewed.

Papers submitted to the science track should make an original and significant contribution to knowledge in the field of artificial intelligence.

Papers submitted to the engineering track should focus on pragmatic issues that arise in reducing AI principles and techniques to practice. Such papers could identify the critical features of some successful application system's approach to reasoning or knowledge acquisition or natural language understanding. Of particular interest are papers that demonstrate insightful analysis of a task domain motivating the selection of a computational and representational approach.

CONTACT POINTS

Submissions and inquiries about the program should be sent to the Program Chair:
> John McDermott
> Department of Computer Science
> Carnegie-Mellon University
> Pittsburgh, PA 15213 USA
> (+1 412) 268-2599
> McDermott@cmu-cs-a.arpa

Inquiries about registration, tutorials, exhibits, and other local arrangements should be sent to the Local Arrangements Chair:
> Marco Somalvico
> Dipartimento di Elettronica
> Politecnico di Milano
> Piazza Leonardo Da Vinci N.32
> I-20133 Milano, ITALY
> (+39 2) 236-7241
> somalvic!prlb2@seismo

Other inquiries should be directed to the General Chair:
> Alan Bundy
> Department of Artificial Intelligence
> University of Edinburgh
> 80 South Bridge
> Edinburgh EH1 1HN
> UK
> (+44 31) 225-7774 ext 242
> Bundy%edinburgh.ac.uk@ucl-cs.arpa

CALL FOR PAPERS AND PROPOSALS
NCC '87

15-18 June 1987, McCormick Place, Chicago, Illinois

NCC is the only information processing conference of its kind, designed explicitly for the end user who keeps abreast of the most current developments in high technology. Business, industry, and the professions look to NCC for advancements and trends that will give them an advantage in the information society of today and tomorrow.

Innovators, trendsetters, and those who shape the future of computer technology will be present at NCC '87. Research, recent breakthroughs in technology, and real world applications are all important in developing

next year's program theme, "Discover the Power of Information".

The Program Committee welcomes proposals for panel discussions and demonstration sessions as well as insightful presentations. Panel discussions provide a forum for exploration of controversial topics or presentation of subjects of particular current interest. Sessions will be selected on the basis of their relevancy, timeliness, and expected audience.

Demonstration sessions provide a fresh format for the presentation of a new or valuable application. Audio-visual presentations or hands-on demonstrations will be considered. Demonstration sessions that are clearly advertisements will not be accepted.

Final selections will be based on the quality of the paper or proposal and the subject's suitability for the NCC audience. Proposals for either type of session should be submitted as abstracts (approximately 500 words) describing the focus, format, suggested panelists, and the target audience. The deadline for **session abstracts is 31 August 1986. Papers** should be submitted by **31 October 1986.**

All papers, abstracts, and requests for NCC '87 Program Guidelines should be mailed to:

> Margaret Butler
> NCC '87 Program Chair
> P.O. Box 129
> Lemont, IL 60439

NCC is sponsored by the American Federation of Information Processing Societies, the Association for Computing Machinery, the Data Processing Management Association, the IEEE-Computer Society, and the Society for Computer Simulation.

For general or attendee information on NCC, write

> NCC '87
> AFIPS
> 1899 Preston White Drive
> Reston, VA 22091
> 1-800-NCC-1987 (in Virginia, (703) 620-8955)

CALL FOR ARTICLES AND PICTURES

The MIT Press calls for articles and pictures for a major new book on artificial intelligence:

The Age of Intelligent Machines
by Raymond Kurzweil

This book, to be published in February 1987, will be the official book for the first major international exhibition on Artificial Intelligence, The Age of Intelligent Machines (AIM). The AIM exhibition is sponsored by nine leading science museums in the United States and anticipates over four million visitors during its three-year national tour. A wide range of Fortune 500 companies, emerging AI companies, and leading academic institutions are providing exhibits and support.

The Age of Intelligent Machines will be published simultaneously in three languages – English (The MIT Press), French (Editions Hologramme), and Japanese. It will be an attractive volume of approximately 300 pages with over 300 illustrations, including color photographs, computer graphics, and original artwork by leading artists. There will be a companion videotape with contributions from a number of talented film makers.

The author, Raymond Kurzweil, is a leading authority on Artificial Intelligence and Chairman of the AIM exhibition. Proceeds from the sale of the book will go the The MIT Press and the Kurzweil Foundation, both nonprofit organizations. The Kurzweil Foundation supports application of technology for the benefit of the handicapped.

CALL FOR ARTICLES

Seventy-five percent of the text will be written by Raymond Kurzweil. The rest will consist of approximately twenty contributed articles, most of which will be selected in the competition described here. Articles submitted may be on any aspect of AI past, present, or future, including techniques, approaches, social and economic impact, philosophical implications, future scenarios and predictions, and related topics. Articles must be alive and entertaining and should be focused on a single aspect of the subject. Human interest, anecdotes, and individual perspectives are encouraged. Keep in mind the target audience: the lay public with an interest in science as well as computer professionals.

Length of the article should be in the range of 500 to 2,000 words with no more than three illustrations. Submissions must include permission to publish in the AIM book. Pictures may be included with the article and must include captions, credits, and permission to publish. Authors should send with their articles current title and affiliations and a brief biography. There will be a payment of $500 for each article selected. Deadline for submission is August 15, 1986.

CALL FOR PICTURES

The Age of Intelligent Machines will include over 300 color pictures. We invite submission of photographs on any aspect of Artificial Intelligence (color preferred, although black and white is acceptable), both current and historical, artwork, and computer graphics. Pictures will be selected on the basis of their relevance and interest level. A copy of the book will be given to those people whose pictures are accepted.

Illustrations submitted must include complete captions, credits, and permission for use. Deadline for submission is August 15, 1986.

For further information, please contact Frank Satlow or Terry Ehling at The MIT Press, (617) 253-1623.

Send articles and pictures to:

> Raymond Kurzweil
> c/o Frank Satlow
> The MIT Press
> 28 Carleton Street
> Cambridge, MA 02142

CALL FOR NOMINATIONS FOR IJCAI AWARDS

THE IJCAI AWARD FOR RESEARCH EXCELLENCE

The IJCAI Award for Research Excellence is given, at each International Joint Conference on Artificial Intelligence, to a scientist who has carried out a program of research of consistently high quality yielding several substantial results. If the research program has been carried out collaboratively the award may be made jointly to the research team. The first recipient of this award was John McCarthy in 1985.

The Award carries with it a certificate and the sum of $1,000 plus travel and living expenses for the IJCAI. The researcher(s) will be invited to deliver an address on the nature and significance of the results achieved and write a paper for the conference proceedings. Primarily, however, the award carries the honour of having one's work selected by one's peers as an exemplar of sustained research in the maturing science of Artificial Intelligence.

We hereby call for nominations for The IJCAI Award for Research Excellence to be made at IJCAI-87 in Milan. The note on Selection Procedures for IJCAI Awards provides the relevant details.

THE COMPUTERS AND THOUGHT AWARD

The Computers and Thought Lecture is given at each International Joint Conference on Artificial Intelligence by an outstanding young scientist in the field of artificial intelligence. The Award carries with it a certificate and the sum of $1,000 plus travel and subsistence expenses for the IJCAI. The Lecture is one evening during the Conference, and the public is invited to attend. The Lecturer is invited to publish the Lecture in the conference proceedings. The Lectureship was established with royalties received from the book *Computers and Thought*, edited by Feigenbaum and Feldman; it is currently supported by income from IJCAI funds.

Past recipients of this honour have been Terry Winograd (1971), Patrick Winston (1973), Chuck Rieger (1975), Douglas Lenat (1977), David Marr (1979), Gerald Sussman (1981), Tom Mitchell (1983), and Hector Levesque (1985).

Nominations are invited for The Computers and Thought Award to be made at IJCAI-87 in Milan. The note on Selection Procedures for IJCAI Awards covers the nomination procedures to be followed.

SELECTION PROCEDURES FOR IJCAI AWARDS

Nominations for The Computers and Thought Award and The IJCAI Award for Research Excellence are invited from all in the Artificial Intelligence international community. The procedures are the same for both awards.

There should be a nominator and a seconder, at least one of whom should not have been in the same institution as the nominee. The nominee must agree to be nominated. There are no other restrictions on nominees, nominators, or seconders. The nominators should

prepare a short submission (less than 2,000 words) for the voters, outlining the nominee's qualifications with respect to the criteria for the particular award.

The award selection committee is the union of the Program, Conference, and Advisory Committees of the upcoming IJCAI and the Board of Trustees of IJCAII, with nominees excluded. Nominations should be submitted before 1 December 1986, to the Conference Chair for IJCAI-87:

Dr Alan Bundy,
IJCAI-87 Conference Chair
Department of Artificial Intelligence
University of Edinburgh
80 South Bridge
Edinburgh, EH1 IHN
Scotland
(+44 31) 225-7774 ext 242
ArpaNet: bundy@rutgers.arpa
JANet: bundy@uk.ac.edinburgh

ANNOUNCEMENTS

THE CATALOGUE OF ARTIFICIAL INTELLIGENCE TOOLS

The Catalogue of Artificial Intelligence Tools is a kind of mail order catalogue of AI techniques and portable software. Its purpose is to promote interaction between members of the AI community. It does this by announcing the existence of AI tools, and acting as a pointer into the literature. Thus the AI community will have access to a common, extensional definition of the field, which will:

• promote a common terminology,
• discourage the reinvention of wheels, and
• act as a clearing house for ideas and software.

The catalogue is a reference work providing a quick guide to the AI tools available for different jobs. It is not intended to be a textbook like the *Artificial Intelligence Handbook*. It, intentionally, only provides a brief description of each tool, with no extended discussion of the historical origin of the tool or how it has been used in particular AI programs. The focus is on techniques abstracted from their historical origins.

The original version of the catalogue was hastily built in 1983 as part of the UK SERC-DoI, IKBS, Architecture Study. It has now been adopted by the UK Alvey Programme and is both kept as an on-line document undergoing constant revision and refinement and published as a paperback by Springer Verlag. Springer Verlag have agreed to reprint the Catalogue at frequent intervals in order to keep it up to date.

The on-line and paperback versions of the catalogue meet different needs and differ in the entries they contain. In particular, the on-line version was designed to promote UK interaction and contains all the entries we received that meet the criteria defined below. Details of how to access the on-line version are available from

John Smith
Rutherford-Appleton Laboratory