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AAAI Workshop on Non-Monotonic Reasoning

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On October 17-19, 1984, a workshop on non-monotonic reasoning was held at Mohonk Mountain House, outside New Paltz, New York. The workshop was organized by Raymond Reiter and Bonnie Webber, and was sponsored by the American Association for Artificial Intelligence.

The setting was spectacular. The hotel is an immense accretion of gables and towers in various architectural styles, facing onto a small lake. Surrounded by 2000 acres of private preserve, in full autumnal splendour, participants quickly forgot the outside world. The grounds include a small mountain, miles of walking paths, and 100 gazebos (*i.e.*, small parasol-bearing elk native to Catskill Mountain resort hotels).

The workshop program covered a variety of topics, with an emphasis on "formal" approaches to non-monotonicity (over half of the papers). As an exception to this trend, one participant, Gary Cottrell (University of Rochester), who presented a connectionist network implementation of inheritance hierarchies with exceptions, went so far as to describe himself as the workshop's "token scruffy."

Circumscription was a favorite topic, with 7 of the 22 presented papers dealing with different aspects and applications John McCarthy unveiled a new, improved form of circumscription: "Formula Circumscription." Other papers discussed theoretical aspects of circumscription, as well as applications to default reasoning and discourse focus.

Default and auto-epistemic reasoning were also well represented, with a number of papers discussing aspects, applications, and implementations of default reasoning systems. Several papers emphasized non-monotonic facets of computational vision, natural language understanding, and common-sense reasoning.

Thursday evening, a panel discussion was held, with John McCarthy, Dana Scott, and Richmond Thomason as panelists. The panel considered non-monotonicity from three perspectives: AI (McCarthy), Logic (Scott), and Philosophy (Thomason). Perhaps the most striking aspect of the discussion was the similarity of the three views presented.

Discussions continued at every available moment—during meals, hikes, rock-climbing, canoe trips, and in the hospitality suite—generally until late in the evenings

The workshop's only disappointment was the shortness of time. Speakers (and the audience) often found that much more time could have been well-spent, especially considering the significance, quality, and complexity of much of the work presented.

A complete list of papers presented is given below. Preprints of the papers were distributed at the workshop, but no proceedings will be published A limited number of copies of the preprints can be obtained from·

Ms. Claudia Mazzetti
American Association for Artificial Intelligence
445 Burgess Drive
Menlo Park, CA 94025.

The cost is (U.S.) $20.00 per copy.

Contents:

- N. Ascher. Linguistic Understanding and Non-Monotonic Reasoning.
- A. Borgida and T. Imielinski. Decision Making in Committees- A Framework for Dealing With Inconsistency and Non-Monotonicity
- G.W. Cottrell. Re: Inheritance Hierarchies with Exceptions
- J. Doyle. Circumscription and Implicit Definability.
- D.W. Etherington, R.E. Mercer, and R. Reiter. On the Adequacy of Predicate Circumscription for Closed-World Reasoning.
- M. Fischler and O. Firschein. Computational Vision as a (Non-Monotonic) Reasoning Process.
- C. Glymour and R. Thomason Default Reasoning and the Logic of Theory Perturbation.
- J.W. Goodwin. WATSON: A Dependency Directed Inference System.
- B. Grosof. Default Reasoning as Circumscription.
- J. Halpern and Y. Moses. Towards a Theory of Knowledge and Ignorance: Preliminary Report

- A Joshi, B. Webber, and R. Weischedel. Default Reasoning in Interaction
- V Lifschitz Some Results on Circumscription.
- W. Lukaszewicz. Considerations on Default Logic
- W Marek. A Natural Semantics for Modal Logic Over Databases and Model-Theoretic Forcing I
- P. Martins and S C Shapiro A Model for Belief Revision
- J. McCarthy. Applications of Circumscription to Formalize Common-Sense Knowledge
- L.T. McCarty Programming Directly in a Non-Monotonic Logic.
- J Minker and D. Perlis Protected Circumscription
- R C. Moore Possible-World Semantics for Autoepistemic Logic
- M.-A Papalaskaris and A. Bundy. Topics for Circumscription.
- D Perlis. Non-Monotonic and Real-time Reasoning.
- D.L. Poole. A Logical System for Default Reasoning
- J A. Reggia and D.S. Nau. An Abductive Non-Monotonic Logic.
- D. Perlis, (compiler). Bibliography of Literature on Non-Monotonic Reasoning.