Special Issue of *Studia Logica*: Logic and Natural Language

Call for Papers

Perhaps the most fundamental characteristic of the twentieth century revolution in mathematical logic is the central role assumed by formal, rather than natural, languages. For the founding fathers of the new logic, natural language was a barrier to progress—one to be swept aside by the new, logically perspicuous syntax of the Predicate Calculus. This dissociation of formal logic from natural language was subsequently compounded by the rise of theoretical linguistics, which—notwithstanding its early stress on the relationship between grammar formalisms and models of computation—developed in relative isolation from mathematical logic. Only towards the end of the twentieth century did work on the relationship between natural and formal languages begin to gather pace. Two convergent trends can be discerned. The first is a growing realization that the characteristics of natural languages that most clearly differentiate them from formal languages—oddly restricted expressive power, redundancy, vagueness, ambiguity—are themselves worthy objects of logical study. The second is an ever livelier interest among formal linguists in logical aspects of grammar—a development which is itself a manifestation of the deepening relationship between logic and the theory of computation.

Today, researchers in Logic, Linguistics, Philosophy and Computer Science face a constellation of questions on the relationship between natural language and logic. What logical resources are required to articulate formal grammars of various sorts? What formal systems best account for the logical relations between sentences in natural language? What light can formalization of natural language shed on the difficulty of language-processing tasks? How does the treatment of quantification (time, modality) in natural and formal languages differ?

Studia Logica invites contributions to a special issue on "Logic and Natural Language", edited by Nissim Francez (Technion, Haifa) and Ian Pratt-Hartmann (University of Manchester). It is envisaged that the issue will comprise papers in two broad areas: (i) the use of logical techniques in the presentation and analysis of grammar formalisms; (ii) investigation of the logical characteristics (expressiveness, complexity, proof-theory) of natural language. We specifically, though not exclusively, invite submissions on the following topics:

- Logical analyses of NL syntax and semantics (e.g. model-theoretic syntax, type-logical grammars, abstract categorial grammars)
- The connection between NL, substructural logics and higher-order logics
- Type-theory and NL
- Logics for non-indicative sentences (questions, commands, ...)
- Dynamic logics for discourse
- Logics of plurality (plural predication, plural quantification)
- Logics of ambiguity
- Modal, temporal and spatial logics in NL
- Complexity- and proof-theoretic analysis of fragments of NLs
- Logics capturing valid NL arguments ('natural logics'),
- Criticism of traditional mathematical logic based on arguments originating from NL
- Modern formalization of Classical and Mediæval logics.

Submitted papers should not exceed 25 pages (including bibliography), formatted according to the *Studia Logica* LaTeX style (for detailed instructions, see `http://www.studialogica.org/`), and should be accompanied by a title page containing the following information: paper title, authors' names, email address and telephone number of the contact author, a short abstract and up to five keywords. Authors' names should not appear on the paper itself. Only electronic submissions will be accepted. The authors should send an email with subject "Studia Logica Special Issue on Logic and Language" to the issue editors (`ipratt@cs.man.ac.uk`), with the file of the paper as an attachment.

Deadline for submission of manuscripts to the issue editors: 3.9.2010.