

Preface

The articles in this special issue of *Fundamenta Informaticae* are revised versions of selected papers presented in the Fifth International Workshop on Deontic Logic in Computer Science (DEON'00) held in Toulouse, France, 20-22 January, 2000. The first workshop in the series was held in Amsterdam, The Netherlands, in December 1991, and subsequent meetings have taken place in Oslo, Norway (1994), Sesimbra, Portugal (1996), and Bologna, Italy (1998).

The Toulouse workshop, like its predecessors, was organized in order to bring together investigators working in deontic logic and its applications in different areas of research, for example: logic and philosophy, legal theory, computer science and artificial intelligence, and management science. During its brief history as an area of systematic logical research, deontic logic has developed from a study of conceptual and logical questions concerning the basic normative concepts (the concepts of obligation, permission, prohibition, and related concepts) into a complex interdisciplinary field which includes studies of norm systems and their formalization, normative positions and the dynamics of norms, the representation of actions and agency, and reasoning about conflicting regulations, as well as research into reasoning about confidentiality, integrity and database security, the interaction between computer systems and their users, and the formalization of contracts and trade procedures.

Another selection of papers presented in the Toulouse meeting have been published in the *Nordic Journal of Philosophical Logic*, Volume 5, Number 2. For more information see: www.tandf.no/njpl.

The papers in this special issue discuss the interrelations between norms and actions, and investigate different approaches to reasoning about norms and/or their violations, the failure of norms to have truth values, the temporality of norm violations, and the procedural character of deontic reasoning. Two of the papers also discuss the applications of deontic logic to information systems and to the design of systems of regulations.

In *A fixed point characterization of a deontic logic of regular actions*, J. Broersen, R. Wieringa and J-J. Meyer study what it means to say that an action is permitted/prohibited/obligatory to perform. J. Carmo and O. Pacheco, in *Deontic and action logics for collective agency and roles*, propose a logic for reasoning about sets of agents that are considered as institutionalized agents who may act in different roles. J. Carmo, R. Demolombe and A.J.I. Jones, in *An application of deontic logic to information system constraints*, apply deontic logic to the definition of integrity and to the characterisation of the different types of constraints used for information systems. L. Cholvy and C. Garion, in *An attempt to adapt a logic of conditional preferences for reasoning with contrary-to-duties*, try to reformulate contrary-to-duties

defined by Carmo and Jones in Boutilier's logic of conditional preferences. J. Hansen, in *Sets, sentences, and some logics about imperatives*, defines a logic for reasoning about norms as entities lacking truth values. R.E. Jennings, in *Natural frames and self-dual logics*, revisits a class of model structures where possibility and necessity have the same logic. X. Parent, in *Cumulativity, Identity and Time in Deontic Logic*, gives a critical analysis of Makinson's temporal view of defeasible conditional obligations. H. Prakken, in *Modeling defeasibility in law: logic or procedure?* argues, by studying the role of the burden of proof in legal argument, that defeasible legal reasoning is intrinsically procedural. Finally, M. Sergot and F. Richards, in *On the representation of action and agency in the theory of normative positions*, apply deontic logic and the logic of agency to the task of formalising and/or designing systems of regulations.

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Guest Editors

Robert Demolombe

Department of Information Processing and Modeling
ONERA
Toulouse, France

Risto Hilpinen

Department of Philosophy
University of Miami
Miami, Florida, USA