Preface

The 10th International Tbilisi Symposium on Logic, Language, and Computation was held in Gudauri, Georgia, during September 23–27, 2013. The Symposium was organized by the Centre for Language, Logic, and Speech at the Tbilisi State University, the Georgian Academy of Sciences and the Institute for Logic, Language, and Computation (ILLC) of the University of Amsterdam. The conference series is centered around the interaction between logic, language, and computation. The contributions represent these three fields, and the symposia aim to foster interaction between them. The scientific program consisted of tutorials, invited and contributed talks, and two special sessions.

It is also worth mentioning that alongside their scientific merit, the Tbilisi symposia are renowned for their social atmosphere and heartwarming welcome by the Georgian hosts. The tenth symposium was no exception and we would like to extend our heartfelt thanks to the organizers, reviewers, and presenters who worked to bring it about.

The symposium offered three tutorials. Samson Abramsky gave a tutorial on contextual semantics, demonstrating how tools from computer science shed light on phenomena at the heart of quantum mechanics, namely non-locality, contextuality, and entanglement. The tutorial on aspect was given by Daniel Altshuler and he focused on the formal semantics of aspectual meaning from a crosslinguistic perspective. Rosalie Iemhoff gave tutorial on admissible rules, i.e., inference steps not explicitly mentioned in the axiomatization of theories, focusing on their nontrivial nature in intuitionistic and modal logic or Heyting arithmetic.

There were six invited talks given by Balder ten Cate, Agata Ciabattoni, Thomas Colcombet, Galit W. Sassoon, Alexandra Silva, and Sergei Tatevosov. Two workshops were organized at the event, the first on aspect, organized by Daniel Altshuler, Sergei Tatevosov, and Daniel Hole and the second on algebraic proof theory, organized by Agata Ciabattoni and Rosalie Iemhoff. Each included their own invited speakers: Roumyana Pancheva and Hans Kamp spoke about aspect and Matthias Baaz, Alessio Guglielmi, and Kazushige Terui gave talks on algebraic proof theory. This volume contains a selection of papers from both invited and contributed talks presented at the symposium. In what follows, we will briefly introduce the selected papers in logic, language, and computation. As many of the papers were interdisciplinary, they are presented in alphabetical order.

Martin Aher seeks to unravel puzzles involving deontic conflicts or, in other words, situations where each possible state of affairs lies contrary to some rule or another. The proposal is realized in a specific iteration of inquisitive semantics, called MadRis, which specifies both support and rejection conditions. The paper focuses on the Dr. Procrastinate puzzle where the desiderata are obtained by assigning each rule a unique violation-proposition, such that in a deontic conflict, no logical contradiction between rules occurs.

Philippe Balbiani and Çiğdem Gencer investigate admissibility and unifiability problems for contact logics. They prove that admissibility of weak rules is decidable for balanced and finitely axiomatized logics, that the unifiability problem for weak formulae is in NP for every logic and NP-complete for consistent logics, and that the unifiability problem for weak formulae can be reduced to theoremhood for consistent logics containing the formula C(1,1).

Kata Balogh's paper extends her prior work on focus that combines feature-based lexicalized tree-adjoining grammar (F-LTAG) and inquisitive semantics to account for the question-answer congruence of various narrow focus constructions. In the second part of the paper, Balogh demonstrates how to provide a uniform treatment of focusing and quantifier scope.

Marina Beridze, Liana Lortkipanidze, and David Nadaraia provide a detailed report on the construction of a Georgian dialect corpus. In the first part they discuss the representativeness in the corpus and problems related to morphological annotation. After that they give a detailed description of the database storing the computational lexicon.

The paper by Nick Bezhanishvili, Dion Coumans, Sam van Gool, and Dick de Jongh investigates the conjunction–implication fragment of intuitionistic propositional logic. Using duality for finite distributive lattices, they give a description of finitely generated universal models of this fragment, and up-sets of Kripke models definable by conjunction–implication formulas.

Cvetan Dunchev, Alexander Leitsch, Mikheil Rukhaia, and Daniel Weller study sequent calculi for first-order logic with induction rules, which often do not enjoy cut elimination. They present an alternative formalism for uniform description of infinite sequences of proofs replacing induction rules, and develop a cut-elimination method in this formalism, based on the CERES method.

Pushing forward the inquisitive semantics enterprise, Jeroen Groenendijk and Floris Roelofsen add a suppositional content type to the previously covered inquisitive and informative content types. The paper focuses on the case where rejecting the antecedent of a conditional sentences neither supports nor rejects it, but suppositionally dismisses it, providing a formal semantic account of this aspect of information exchange.

Paula Henk offers a new perspective on the arithmetical completeness of GL as the provability logic of Peano arithmetic. Her paper introduces several arithmetical accessibility relations that turn the collection of models of PA into a Kripke model, and shows that every finite GL-model is bisimilar to such an arithmetical Kripke model using a variant of Solovay's completeness proof.

Dick de Jongh and Zhiguang Zhao investigate the positive fragment of intuitionistic and minimal propositional and predicate logic. The authors first provide a characterization of the positive fragments of IPC/IQC in terms of so-called top models. Furthermore, they prove a uniform interpolation theorem for the positive fragments of IPC and MPC. Finally, they study conservative extensions of the positive fragment of IPC and IQC starting from the well-known result that Jankov's Logic KC is conservative over the positive fragment of IPC.

The joint paper by Gary Mar, Yuliya Manyakina, and Amanda Caffary lies at the intersection of logic and linguistics. They consider the similarities and differences between 'unless' and 'until' with the aim to propose a unified compositional account.

This is standardly considered unachievable in linguistics, and the authors seek to uncover the underlying source of the problems in Willard van Orman Quine's classic treatment of 'unless'.

Ralf Naumann and Wiebke Petersen describe a formalization of (a variant of) Löbner-Barsalou frame theory (LBFT) in terms of a dynamic frame theory that is based on both Dependence Logic and Dynamic Epistemic Logic. The focus of their work lies in particular on the interpretation of numerals and scalar quantifiers.

Alfred Ortmann presents evidence from Germanic and Mayan languages, which underpins the fourfold typology of nominal concepts derived from the binary features of uniqueness and relationality. His main findings are that recategorizations tend to be marked morphologically and that only phonologically 'strong' forms of definite articles are reliably semantically active. Overall, morphological marking in split article systems reflects conceptual markedness.

Katsuhiko Sano and Minghui Ma investigate Visser's basic propositional logic BPL. They provide an embedding of BPL into the modal logic wK4, based on which they present two alternative semantics for BPL: the proper successor semantics on Kripke frames and a topological semantics using the topological derivative operator.

The paper by Galit W. Sassoon considers challenging data on within-predicate and between-predicate comparisons where adjectives and nouns behave in opposite manner. In an interdisciplinary turn, Sassoon utilizes the psychological notion of a contrast set to account for both the behavior of nouns and adjectives in the above comparisons.

Kerstin Schwabe sets out to present a new analysis of German argument conditionals. Argument conditionals are conditional clauses which are anaphorically linked to a propositional *es*-argument in the embedding clause (*Max akzeptiert es, wenn Lea Geige spielt*. 'Max accepts it if Lea plays the violin'). Schwabe identifies two different implication types that occur in such conditional constructions and she discusses restrictions on predicate classes that embed argument conditionals.

In their contribution, Yulia Zinova and Hana Filip argue for a third–biaspectual–aspect category in Russian which complements the well-known perfective/imperfective partition. A new diagnostic is proposed which identifies positive cases of perfective aspect, thereby allowing us to establish the third biaspectual category with a clear behavioral criterion.

January 2015   Martin Aher
                                                                    Daniel Hole
                                                                    Emil Jeřábek
                                                                    Clemens Kupke