

THE ANNUAL CONFERENCE OF THE
AUSTRALASIAN ASSOCIATION FOR LOGIC

University of Wollongong, Australia
July 12, 2019

The annual meeting of the Australasian Association for Logic was held at the University Wollongong on July 12, 2019. The outgoing president of the association for 2018 was Max Cresswell and the incoming president for 2019 is Martin Bunder, both were elected by unanimous consent.

Six talks were presented at the meeting, abstracted below.

AAL President and Conference Director
MARTIN BUNDER

Abstracts of contributed talks

- ▶ MARTIN BUNDER, *BCI-algebras and related logics*.
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Kabzinski, in [1], first introduced an extension of BCI-logic that is isomorphic to BCI-algebras. Kashima and Komori, in [2], gave a Gentzen-style sequent calculus version of this logic as well as another sequent calculus which they proved to be equivalent. The second they used to prove decidability of the word problem for BCI-algebras. The decidability proof relies on cut elimination for the second system; this article provides a fuller and simpler proof of this. Also supplied is a new decidability proof and proof-finding algorithm for their second extension of BCI-logic and so for BCI-algebras.

[1] J. KABINSKI, *BCI-algebras from the point of view of logic*. *Bulletin of the Section of Logic*, vol. 12 (1983), pp. 126–131.

[2] R. KASHIMA and Y. KOMORI, *The word problem for free BCI-algebras is decidable*. *Mathematica Japonica*, vol. 37 (1992), no. 6, pp. 1025–1029.

- ▶ TIMO ECKHARDT, *Forgetting positive epistemic formulas in a multiagent epistemic logic*.
Philosophy, University of Melbourne, Australia.

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In this article, I provide a generalised formal account of forgetting that allows for more than simply forgetting Boolean formulas. In order to do so, I present a system that generalises Fernández-Duque et al.'s framework of forgetting of [1] in two ways: By allowing for multiple agents and by being able to handle “positive Epistemic” Formulas, i.e., those that do not include negations of knowledge statements. It will be based on the minimal change approach that preserves as much knowledge of an agent as possible while the knowledge of the forgotten formula is lost. I introduce an operator $[\dagger\varphi]$. A ψ that represents the result of the agents A forgetting φ , i.e., “ Ψ after some agents A forget that φ .” Finally, I show that the operation is

successful, i.e., that after A forget φ , they in fact no longer know.

[1] D. FERNANDEZ-DUQUE, A. NEPOMUCENO-FERNÁNDEZ, E. SARRION-MORILLO, F. SOLER-TOSCANO, and F. R. VELAZQUEZ-QUESADA, *Forgetting complex propositions*. *Logic Journal of the IGPL*, vol. 23 (2015), no. 6, pp. 942–965.

► BEN BLUMSON, *Relevance and verification*.

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According to Ayer's first empiricist criterion of meaning: "we may say that it is the mark of a genuine factual proposition that some experiential propositions can be deduced from it in conjunction with certain other premises without being deducible from those other premises alone." Ayer's criterion is supposed to distinguish nonsense, on the one hand, from genuine factual propositions and tautologies, on the other. But if deducibility is interpreted in terms of classical logic, Ayer's criterion is well known to be trivial—it entails that every statement is either a genuine factual proposition, or else a tautology. But in this article, I show that if deducibility is interpreted in terms of relevant logic (in particular, the relevant logic NR), then Ayer's criteria escapes triviality.

► MARCIA PINHEIRO, *Nothing but allurements: The Monty Hall Problem*.

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Professor Doctor Priest mentioned Monty Hall, and his famous TV show, where randomly selected people had to choose a door in three, then confirm or change their choice at a second moment, in a conference in 2000: the magic trick that proved that mathematicians had imperfect reasoning when laying the foundations of Combinatorics. Mathematicians responded: it is not the sight, but the eyes of the beholder of the vision; their eyes see only what they intend to see instead of what should be seen. We discuss the analysis presented by Pinheiro in *The Monty Hall Problem*, a book from 2016, available at Amazon.com, and, with that, a "proof" presented by Doctor Baumann in 2008. The intentions are convincing the public that Doctor Baumann's proof contains a fallacy, and therefore Priest does not have a soundproof of his claim in this problem.

► SHAWN STANDEFER, *A substructural approach to explicit modal logic*.

Philosophy, University of Melbourne, Australia.

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In this talk, I will present a class of ternary relational models for explicit modal logics. I will highlight a difficulty for proving completeness for these logics. Completeness can be proved by extending the language and the logic. I will then show how to accommodate some common extensions of the explicit modal logics in the present setting.

► KAI TANTER, *A note on restricting failures of identity and cut*.

Philosophy, Monash University, Australia.

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In their recent article "Negation as Cancellation, Connexive Logic, and qLPm" Wansing and Skurt (2018) define a system qLPm that combines Priest's minimally inconsistent Logic of Paradox (LPm) with Malinowski's q-entailment. Like q-entailment, qLPm is nonreflexive; however, the combination with LPm results in failures of reflexivity being restricted to contradictions. In this talk I'll look at extending this work to restricting failures of transitivity, as well as to the Liar and Curry sentences.