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FORMAL METHODS AND SCIENCE IN PHILOSOPHY

Inter-University Centre, Dubrovnik, Croatia
May 4–6, 2017

ABSTRACTS

Keynote lectures

Cats which are not cats

JEAN-YVES BÉZIAU
University of Brazil, Rio de Janeiro; Brazilian Research Council

In this talk I will explain how we can justify a paraconsistent negation according to which, for example, something can be a cat and not a cat. I will first make some considerations about the nature of classical negation, emphasizing its abstract nature. I will also recall the classical definition of contradiction within the framework of the square of opposition. I will then discuss the relations between contradiction, dichotomy and negation. I will show how it makes sense to go beyond dichotomy using paracomplete and/or paraconsistent negations, giving on the one hand some concretes examples, on the other hand, formal methods that can be used to develop the theory behind these negations.

References:
J.-Y. Béziau, "Round squares are no contradictions", in *New Directions in Paraconsistent Logic*, Springer, New Delhi, 2015, pp.39-55.
J.-Y. Béziau, "Disentangling Contradiction from Contrariety via Incompatibility", *Logica Universalis*, 10 (2016), 157-170.
N.C.A. da Costa and J.-Y.Béziau, "Overclassical logic", *Logique et Analyse*, 157 (1997), 31-44.

Truth Ascriptions and their Grounds. Bolzano meets Frege

WOLFGANG KÜNNE
 University of Hamburg

The equivalence schema 'The thought that p is true iff p' captures an important feature of the concept of truth. Frege went beyond this true-iff principle when he claimed that instances of the antecedent and corresponding instances of the consequent express the same thought. I wonder whether he has any good argument for this Identity Thesis, and I shall show that, and why, Bolzano rejects it. Bolzano emphasizes an important feature of the concept of truth that is not captured by

the equivalence schema. One can hint at this additional feature by saying, 'If the thought that p is true, then it is true because p'. I shall locate this true-because principle in Bolzano's theory of grounding (Abfolge), and I shall explore whether the Identity Thesis can be refuted by appealing to this principle.

Talks

Operator algebra in physics, computer science, and logic: a new perspective for a naturalistic formal ontology

GIANFRANCO BASTI
Pontifical Lateran University, Vatican City

In the case of dissipative systems, the associated "doubled" Hilbert space, where each system state is mirrored by the "reversed" thermal bath state, the choice of the orthonormal finite basis of the (per se infinite dimensional) Hilbert space is determined by the dynamics, and does not depend at all on the "observer" like in QM. Consequently, the associated qubit of a two-state quantum system Boolean computation, because of the "doubling" (system-thermal bath) of each of the two states, acquires immediately a semantic value (match-mismatch system/environment), so to give to the physical minimum energy function the associated role of a Boolean true/false operator, with evident consequences for the foundation of a naturalistic formal ontology of quantum physics. This conclusion is further supported by the fact that one of the most significant experimental confirmation of this coalgebraic thermal QFT is in neuroscience, for modelling the "entanglement" with the environment of living and healthy (dissipative) brains.

Contribution to discussion on formal vs. informal logic

GABRIELA BAŠIĆ
University of Split, Faculty of Humanities and Social Sciences

Relationship between formal and informal logic has been disputed for some time now in argumentation theory. Mainstream theorists have long misrepresented aims of formal logic started by Frege, consequently declaring it unnecessary/insufficient for the study of argumentation. Others, however, regard the general ques-

tion on differences between the two of a lesser importance, in contrast to the work on particular problems. Stressing the distinction between arguments and argumentation as both proper objects of study of argumentation theory, I will address the issue adopting a less strict notion of logic.

What Influences does Cognitive Science Have on the Philosophy of Mind?

JANINA BUCZKOWSKA

Cardinal Stefan Wyszyński University, Warsaw, Institute of Philosophy

This paper analyses theoretical and methodological contribution of cognitive science to philosophy of mind and considers how development of neuroscience affects philosophy. It is shown that cognitive science not only creates new theoretical framework for philosophical questions and provides new content for philosophical concepts but also enriches the a priori methods of conceptual and logical analysis, traditionally dominant in philosophy, by empirical methods. The detailed discussion of these issues is based on the example of changing the concept of mental representations under the influence of neuroscience. Finally, I argue that such interaction does not reduce philosophy of mind to neuroscience but it increases its specific explanatory power by making it scientifically informed.

The Attributive Concept of Matter

GRZEGORZ BUGAJAK

Cardinal Stefan Wyszyński University, Warsaw, Institute of Philosophy

Attempts to create an adequate understanding of matter in philosophy usually come down to listing properties characteristic to all objects regarded as material. Such attempts give rise to the attributive concept of matter analysed in this paper. Features of matter usually regarded as fundamental are the following: 1) extension, 2) inertia (having mass), 3) spatialness and timeliness, 4) being subject to regularities, 5) motion, 6) cognition through senses (observability). All of them will be analysed in the paper in the light of current scientific knowledge of the 'material' world.

Imprecise Probability and Chance-Credence Coordination

LUKE FENTON-GLYNN

University College London, Department of Philosophy

Orthodoxy has it that both chances and rational credences can be represented by unique probability functions, and that credences are constrained by chances in accordance with David Lewis's Principal Principle (which says that rational credences match known chances in the absence of 'inadmissible' information). But an ever-growing minority allow that rational credences may sometimes be *imprecise* (and modelled by *sets* of probability functions). It has also been argued that the *chances* associated with certain physical processes (flicker noise, decay of the EPR state) are imprecise. I defend a generalization of the Principal Principle to the case where both credences and chances are imprecise.

Tableau Systems for Relating Logics

TOMASZ JARMUŻEK, MATEUSZ KLONOWSKI

Nicolaus Copernicus University in Toruń

A main scientific problem we aim to present in the paper is a survey of some intensional logics in a tableau framework. The logics of the kind we examine here we call *relating* logics, since they cover ways of relating formulas by some special connectives. This way we are able to consider many non-extensional relationships, like for instance causality, on a level of non-Boolean connectives.

Some Deontic Logic Motivated by a Distinction between Deontic Necessity and Obligation

MATEUSZ KLONOWSKI

Nicolaus Copernicus University in Toruń

In the paper we propose a deontic logic which enables us to deal with well-known paradoxes of deontic modalities and offers a way to express on a formal ground distinction between notions of deontic necessity and obligation. We introduce possible world semantics combined with semantics of relating logics. The second component enables to express some deontic relationship of a normative system's obligations.

Logical laws in a formalization of a Kantian theory of concepts

SREĆKO KOVAČ
Institute of Philosophy, Zagreb

We reconstruct the logical role of the laws of non-contradiction, sufficient reason and excluded middle for a formalized theory of concepts as it can be established and formalized on the basis of Kantian conceptions of "general" and "transcendental" logic. We further develop the approaches of (Kovač 2013, 2015), and show, in particular, that features of justification logic (contained in the logic of "hypothetical judgment") should be assumed to enable the derivability within the concept theory, A semantic labelled tree structure is used for modeling the resulting formal concept theory. The role of subject-predicate distinction is commented on with respect to its role in defining logical opposition and in the avoidance of logical and semantic antinomies.

The necessity of the intuitive

ETHAN LANDES
University of St. Andrews

A number of authors have recently questioned whether intuitions have a central role in philosophy, using exegesis of classic thought experiments to argue that philosophers employing thought experiments do not depend on intuitions to justify their conclusions. Examining Max Deutsch's proposed intuition-free analysis of Gettier's paper, my projects shows, for logical reasons, Deutsch does not provide an adequate account of Gettier's argument against the justified true belief account of knowledge. This provides insight into problems other intuition-free accounts of philosophical argumentation must face.

Axiomatizing Epistemology

VLADIMIR LOBOVIKOV
Ural Federal University Yekaterinburg

The axiomatic system of epistemology has 10 *own* axioms. The first two are below.

AX-1: $Ap \leftrightarrow (Kp \wedge \Box(p \leftrightarrow \Box p) \wedge \Box(p \leftrightarrow Op) \wedge \Box(p \leftrightarrow Gp) \wedge \Box(p \leftrightarrow Bp) \wedge \Box(p \leftrightarrow Up) \wedge \Box(p \leftrightarrow Wp) \wedge \Box(p \leftrightarrow Fp) \wedge \Box(p \leftrightarrow Tp) \wedge \Box(p \leftrightarrow Pp) \wedge \Box(p \leftrightarrow Dp) \wedge \Box \neg Sp)$.

AX-2: $Ep \leftrightarrow (Kp \wedge (\neg\Box(p \leftrightarrow \Box p) \vee \neg(\Box(p \leftrightarrow Op) \vee \neg\Box(p \leftrightarrow Gp) \vee \neg\Box(p \leftrightarrow Bp) \vee \neg\Box(p \leftrightarrow Up) \vee \neg\Box(p \leftrightarrow Wp) \vee \neg(\Box(p \leftrightarrow Fp) \vee \neg\Box(p \leftrightarrow Tp) \wedge \Box(p \leftrightarrow$

$Pp) \lor \neg\Box(p \leftrightarrow Dp) \lor \neg\Box\neg Sp))$.

Here Ap stands for "person *a-priori knows* that p". Kp – "person *knows* that p". Ep – "person *a-posteriori knows* that p". Relations among Ap, Kp, Ep are modeled by the hexagon.
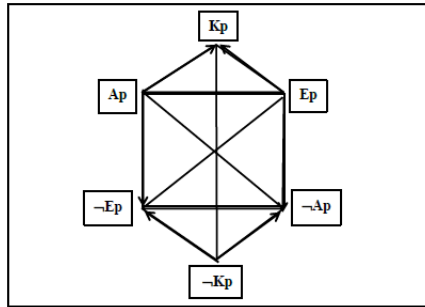

Figure 1.1: Synthesizing *a priori* and *a posteriori* knowledge in universal epistemology

Cumulative Intensional Ramified Theory of Types

GORAN LOJKIĆ
Institute of Philosophy, Zagreb

I present a system of monadic cumulative intensional ramified type theory CIRTT, based on Russell's ramified type theory from the first edition of *Principia Mathematica* and Fitting's intensional simple type theory, but with somewhat loosened restrictions on the Vicious Circle Principle that guided Russell's system. First, I explain briefly some of the ideas and intuitions that motivate CIRTT, and then sketch formative rules, semantics, and tableau proof procedure. Lastly, I describe basic meta-theoretical properties and relations between CIRTT and the aforementioned type theories.

LCG&B Logic of Changing Beliefs

MARCIN ŁYCZAK
Cardinal Stefan Wyszyński University, Warsaw, Institute of Philosophy

The LCG logic was originally formulated by Świętorzecka in [Sw] as the logic which describes the concept of particular kind of changes – dichotomous situa-

tional changes – expressed in systematically extending language. The LCG is built on classical logic in result of adding a modal operator *C* to it, read as: *it changes that* ... . Our aim is to form an epistemic adaptation of the LCG system. For this purpose, we add one place operator *B* to the LCG language, read as: *x believes that* ..., applied to Boolean formulas. We propose an axiomatisation which is an extension of the original LCG axiom system, characterizing B operator. For our system we present semantics based on the semantics that is intended for the LCG. In our semantics, we analyse the concepts of conflict and consensus.

Reference:
[Sw] Świętorzecka, K., (2008), *Classical Conceptions of the Changeability of Situations and Things Represented in Formalized Languages*, CSWU, Publ. House, Warsaw.

A Syntactic Characterisation of Modal Logic over Jaśkowski's Discussive Logic D_2

KRYSTYNA MRUCZEK-NASIENIEWSKA, MAREK NASIENIEWSKI
Nicolaus Copernicus University Toruń

We give a syntactic characterisation of a modal extension of Jaśkowski's logic D_2. It is obtained by considering modal operators of possibility and necessity. A method of axiomatisation of D_2 was given by J. Kotas. We adopt this method to give an axiomatisation of the system S5.

Reference:
Jaśkowski, S., "Rachunek zdań dla systemów dedukcyjnych sprzecznych", *Studia Societatis Scientiarum Torunensis*, Sect. A, vol. I, no. 5 (1948): 57–77

Ontology as a Formal One

VASIL PENCHEV
Bulgarian Academy of Sciences, Institute for the Study of Societies and knowledge, Dept of Logical Systems and Models

"Formal ontology" is introduced first to programing languages in different ways. The most relevant one as to philosophy is as a generalization of "n^{th}-order logic" and "n^{th}-level language" for $n = 0$. Then, the "zero-level language" would be a theoretical reflection on the naïve attitude to the world, after which the "things and words" coincide by themselves. That approach corresponds directly to the

philosophical phenomenology of Husserl or fundamental ontology of Heidegger. Ontology as the 0-level language may be researched as a formal ontology. The talk explains how.

On Jaśkowski's Discussive Logic and Jaśkowski's Discussive Consequence

ANDRZEJ PIETRUSZCZAK, MAREK NASIENIEWSKI
Nicolaus Copernicus University in Toruń

Jaśkowski's logic $\mathbf{D_2}$ was formulated as follows:

$$B \in \mathbf{D_2} \quad \text{iff} \quad \Diamond B^* \in S5,$$

where * translates $\wedge$ and $\rightarrow$ into modal formulas.

$\mathbf{D_2}$ is connected with a consequence relation:

$$A_1, \ldots, A_n \vdash_{\mathbf{D_2}} B \quad \text{iff} \quad \Diamond A_1^*, \ldots, \Diamond A_n^* \Vdash_{S5} \Diamond B^*,$$

where $\Vdash_{S5}$ is a modus-ponens consequence relation abased on S5. One can generally indicate the smallest logic defining $\mathbf{D_2}$ (and $\mathbf{D_2}$-consequence) in some families of modal logics. It appears that the smallest logics defining $\mathbf{D_2}$ and $\mathbf{D_2}$-consequence are different for standard classes of modal logics.

Genidentity of Situations in Terms of J. Wajszczyk's Logic of Continuous Changes (*LZC*)

MAREK PORWOLIK
Cardinal Stefan Wyszyński University, Warsaw, Institute of Philosophy

Józef Wajszczyk is the author of two sentential temporal logics of changes: a logic of dichotomous changes and a logic of continuous changes (WJ). They describe changes in the possession of a given property, which are caused by temporal objects. In particular calculi it is assumed that variability is either dichotomous or continuous. In contrast to variability, it is possible to consider the standing of objects subject to changes and describe them using the notion of genidentity. The aim of the presentation is to express the genidentity of situations in the language of Wajszczyk's logic of continuous changes (*LZC*).

Reference:
(WJ) Józef Wajszczyk, *Logika z czas i zmiana*, Wyższa Szkoła Pedagogiczna, Olsztyn 1995.

Weak Meinongianism and the Problem of Generalizations with the Existence Predicate

DOLF RAMI

Georg-August-Universität Göttingen, Philosophisches Seminar

Firstly, I will briefly introduce a first-order conception of existence based on negative free logic that shares some interesting features with the classical second-order conceptions of Frege and Russell, namely (a) the existential import of first-order quantifiers (b) the avoidance of the assumption of non-existence objects, but that also has some advantages over the latter view that mainly concern the analysis of singular existential sentences.

Secondly, I will confront this view with a problem posed by Meinongianism that concerns generalizations in connection with the existence predicate like 'Every merely possible object does not exist'. I will show that none of three standard responses to this problem provide a plausible solution. Based on this diagnosis, I will, finally, briefly propose a weak Meinongian conception of existence that makes use of a formal framework that combines advantages of Meinongianism and the mentioned view based on negative free logic.

Brouwer's Account of Time and Causality in the Logic of Change

IVAN RESTOVIĆ

Institute of Philosophy, Zagreb

I will argue that concepts of time and causality are fundamental to understanding intuitionism and, consequently, intuitionistic logic. L. E. J. Brouwer had an extensive theory of temporal and causal awareness, which incorporates his views about mathematics and logic, including the infamous rejection of $P \lor \neg P$. I will propose a formalisation of Brouwer's fundamental concepts via Logic of change (LCG), proposed by Kordula Świętorzecka. The hallmark operators of LCG, non-surprisingly: C and G are offered a causal and temporal interpretations, respectively.

Numeral representations of completed sequential processes

DAVIDE RIZZA

University of East Anglia

Infinite sequences of actions and decisions that take place at a geometrically increasing pace have been extensively discussed in the philosophical literature,

on account of their paradoxical features. In this paper I rely on the computational methodology introduced by Yaroslav Sergeyev to show that paradoxical features result from the exclusive availability, in classical mathematics, of arguments that must neglect the infinitely far away stages of completed, infinite processes, in particular terminal ones. The shortcoming can be overcome through the use of Sergeyev's stronger numeral system.

Tense Logic and the Notion of Determinism

DARIUSZ SUROWIK
University of Białystok, Department of Logic, Informatics and Philosophy of Science

In our talk we woud like to consider the notion of determinism from logical point of view. Usually, arguments on determinism are based on the principle of causality, the principle of bivalency or the tertium non datur. To create an indeterministic logic system we have to reject one of these principles. Determination should be considered in a temporal context; then we will consider some systems of tense logic (based on classical and intuitionistic logic) and formulate the thesis of determinism in the languages of these systems as $F\varphi \vee F\neg\varphi$ and $\varphi \rightarrow HF\varphi$. We will show advantages and defects of discussed systems and we will prove that the thesis of determinism formulated in the language of tense logic as $F\varphi \vee F\neg\varphi$ is not a tautology of some systems of temporal logic of non-ending, dense and linear time.

Formalizing Inferential Evidentiality: From Justification Logic to Machine Learning

KRISTINA ŠEKRST
Visage Technologies d.o.o./University of Zagreb

Evidentiality is a grammatical category in which the speaker is *obligated* to state the evidence for his statement, otherwise the statement is ungrammatical. One can use justification logic – that unfolds modalities into justification terms – to formalize inferential rules in such languages. It will be shown how justification logic can be used to formalize indirect evidentiality, that lie on speaker's background knowledge or inference, unlike direct evidentials that depend on sensory perception. Hence, it will be shown how justification logic axiomatization of such examples can be used in theoretical computer science, where such abstract notions can be processed in machine learning of rules and concepts in natural language.

Towards Semantics for Bolzano's Theory of Substances and Adherences: Consistency of Adherential *Inbegriff*

KORDULA ŚWIĘTORZECKA

Cardinal Stefan Wyszyński University, Warsaw, Institute of Philosophy

The background of Bolzano's argument for the existence of substances referring to the concept of adherence was formalized as a consistent extension of Zalta's elementary theory of abstract objects in [*]. The problem of finding an acceptable semantics for this proposal is open. Semantics for Zalta's theory, sketched by Scott, is not satisfactory: certain Bolzano's axioms are true just because they consist of false antecedences and a refinement of a description of the concept of adherence causes the inconsistency of *Inbegriff* of all adherences. The point of the lecture is to show the way of avoiding the mentioned problems in frame of some version of Aczel's semantics for modal theory of abstract objects.

Reference:
[*] K. Świętorzecka, (2017) "Bolzano's Argument for the Existence of Substances: a Formalization with Two Types of Predication", *Acta Analytica* (DOI 10.1007/ s12136-017-0317-4)

Confirmation and the Generalized Nagel-Schaffner Model of Reduction: A Bayesian Analysis

MARKO TEŠIĆ

Ludwig Maximilian University, Munich

Recently, Dizadji-Bahmani et al. (2011) presented a Bayesian analysis of the confirmatory relation between the reducing theory (F) and the reduced theory (P) and argued that, post-reduction, evidence confirming F also confirms P and evidence confirming P also confirms F. I argue that this analysis faces difficulties. In particular, I argue that the conditional probabilities that authors introduce to model the bridge law entail consequences that run against the generalized Nagel-Schaffner account of reduction they defend. However, I also argue that, given slight modifications, one is able to account for these difficulties and, moreover, one is able to more rigorously analyze the confirmatory relations between F and P.

Reference:
Dizadji-Bahmani, F., Frigg, R., & Hartmann, S. (2011), "Confirmation and Reduction: A Bayesian Account", *Synthese*, 179, 321-338.

Explanatory (A)symmetries and Humean Laws

MICHAEL TOWNSEN HICKS
University of Oxford, Department of Astrophysics

Recently, Lange (2009) has argued that symmetry principles are higher- order laws which explain other physical laws. Here I argue that Lange is wrong to consider symmetry principles higher-order laws, rather than first-order descriptions of the world. I'll then show that the Humean should agree with Lange that symmetry principles are explanatorily prior other laws, but for a different reason: because the symmetry principles represent a particularly informative and simpler way of describing the world.

A Logical Conceptualization of Knowledge on the Notion of Language Communication

URSZULA WYBRANIEC-SKARDOWSKA
Cardinal Stefan Wyszyński University, Warsaw, Institute of Philosophy

The main objective of the paper is to provide a conceptual apparatus of a general logical theory of language communication. The aim of the paper is to outline a formal-logical theory of language in which the concepts of the *phenomenon of language communication* and *language communication in general* are defined and some conditions for their adequacy are formulated. The theory explicates the key notions of contemporary syntax, semantics and pragmatics.

The theory is formalized on two levels: *token*-level and *type*-level. As such, it takes into account the dual – *token* and *type* – ontological character of linguistic entities.

The basic notions of the theory: *language communication*, *meaning* and *interpretation* are introduced on the second, *type*-level of formalization, and they required prior formalization of some of the notions introduced on the first, *token*-level; among others, the notion of an *act of communication*.

Owing to the theory, it is possible to address the problems of adequacy of both empirical acts of communication and of language communication in general.

All the conditions of adequacy of communication, discussed in the presented paper, are valid for one-way communication (sender-recipient); nevertheless, they can also apply to the reverse direction of language communication (recipient-sender). Therefore, they concern the problem of two-way understanding in language communication.

Closed without Boundaries

ELIA ZARDINI
Universidade de Lisboa, LanCog, Language, Mind and Cognition Research Group, Centro de filosofia

The paper discusses the argument that closure has the problematic consequence that, if one individually knows *n* premises, one also knows their *n*-fold conjunction—yet, each of the premises might exhibit interesting positive epistemic properties while the *n*-fold conjunction might fail to do so. The paper observes that the argument involves showing that closure acts in effect as a soritical principle, which is in turn assumed to entail the problematic consequence. There are however non-transitive logics of vagueness in which soritical principles do not entail any problematic consequence. Assuming these logics, the paper argues that the argument describes a situation where knowledge is vague, so that a non-transitive logic should be used, with the effect that closure no longer entails the problematic consequence.

Philosophy and Conceptual Networks

KREŠIMIR ZAUDER, JOSIP ĆIRIĆ
Zadar University, Information sciences department

Complex network analysis has been used widely in various sciences. Some recent applications in philosophy include Randal Collins' analysis of social networks in the history of philosophy, bibliometric research focused on specific philosophical topics or visualizations.

We started to map the most important concepts and persons in philosophy using edited field of knowledge provided by several encyclopedias and dictionaries which represent a field of knowledge as edited and interconnected by reliable experts. Links between encyclopedia articles constitute a network of meaningful relationships which we propose to study via well-established indicators in network theory.

Language of normativity and the normativity of language-use

BERISLAV ŽARNIĆ
University of Split, Faculty of Humanities and Social Sciences

A typology of communication norms and communicative interactions will be proposed in order to provide a conceptual framework for the research in logi-

cal pragmatics. The main norm related conceptual distinctions that will be introduced include: 1. the difference between communication and non-communication norms, 2. the distinction between the one-actor communication norms and norms of communicative interaction, 3. the distinction between logical and extra-logical communication norms. The conceptual framework will be applied in the analysis of communicative interaction. The three main types of communicative interaction will be defined on the basis of their normative context, i.e., varieties of norms governing communicative interactions. The main types are: 1. trustful, 2. argumentative, and 3. hierarchical type of communicative interaction. Some applications of the typology of communicative interaction will be outlined and argued for: 1. in philosophy of science regarding the criterion of scientific knowledge with respect to the dynamics of communicative interaction types; 2. in the philosophy of language as providing the basis for the critique against those theories that implicitly presuppose only a single type of communication; 3. in philosophy of logic arguing that the standpoint where logic is understood as the essence of language in use has certain advantage to other pragmatics-based approaches, most notably to normative pragmatics and illocutionary logic; 4. in deontic logic as the normativity of language-use is a source of the second-order norms for the norm-giving activity.

PROGRAMME

THURSDAY I, May 4, 2017

09:00-10:00	Registration	(Secretariat and registration desk)

10:00-10:10	Opening
10:10-11:00	**Key-note lecture**:
	Wolfgang KÜNNE, Truth ascriptions and their grounds.
	Bolzano (†1848) meets Frege (*1848)

11:05 -11:45	Elia ZARDINI, Closed without boundaries	
Chair: K.Świętorzecka		(Large Hall, basement fl.)

11:45-12:15	Coffee break

12.15-12:55	Grzegorz BUGAJAK, The attributive concept of matter	
13:00-13:40	Michael TOWNSEN HICKS, Explanatory (a)symmetries and Humean laws	
Chair: M. Porwolik		(Room 2, 1st fl.) section

12.15-12:55	Marek NASIENIEWSKI, Krystyna MRUCZEK-NASIENIEWSKA A syntactic characterization of modal logic over Jaśkowski's discussive logic D_2	
13:00-13:40	Dariusz SUROWIK, Tense logic and the notion of determinism	
Chair: E. Zardini		(Room 1, 1st fl.) section

14:00-15:00	LUNCH (catering)	(Atrium)

The time slot for each lecture/talk includes 10 minutes for discussion.

THURSDAY II, May 4, 2017

16:00-16:40	Janina BUCZKOWSKA, What influences does cognitive science have on the philosophy of mind?
16:45-17:25	Vladimir LOBOVIKOV, Axiomatizing epistemology
Chair: V. Penchev	
17:25-17:55	Coffee break
17:55-18:25	Mateusz KLONOWSKI, Some deontic logic motivated by a distinction between deontic necessity and obligation
18:30-19:00	Marko TEŠIĆ, Confirmation and the generalized Nagel--Schaffner model of reduction: a Bayesian analysis
Chair: D. Rizza	

(Room 1, 1st fl.) section

16:00-16:40	Kordula ŚWIĘTORZECKA, Towards semantics for Bolzano's theory of substances and adherences: consistency of adherential *Inbegriff*
16:45-17:25	Srećko KOVAČ, Logical laws in a formalization of a Kantian concept theory
Chair: D. Surowik	
17:25-17:55	Coffee break
17:55-18:25	Ivan RESTOVIĆ, Brouwer's account of time and causality in the logic of change
18:30-19:00	Marcin ŁYCZAK, LCG&B logic of changing beliefs
Chair: K. Šekrst	

(Room 2, 1st fl.) section

FRIDAY I, May 5, 2017

09:00-09:50	**Key-note lecture**: Jean-Yves BÉZIAU, Cats which are not cats
09:55 -10:35	Urszula WYBRANIEC-SKARDOWSKA, A logical conceptualization of knowledge on the notion of language communication
Chair: M. Nasieniewski	(Large Room)
10:35-11:05	Coffee break
11.05-11:45	Berislav ŽARNIĆ, Language of normativity and the normativity of language-use
11:50-12:30	Andrzej PIETRUSZCZAK and Marek NASIENIEWSKI, On Jaśkowski's discussive logic and Jaśkowski's discussive consequence
12:35-13:15	Luke FENTON-GLYNN, Imprecise probability and chance--credence coordination
Chair: D. Rami	(Room 2, 1st fl.) section
11.05-11:45	Gianfranco BASTI, Operator algebra in physics, computer science and logic: a new perspective for a naturalistic formal ontology
11:50-12:30	Vasil PENCHEV, Ontology as a formal one
12:35-13:15	Marek PORWOLIK, Genidentity of situations in terms of J. Wajszczyk's logic of continuous changes (*LZC*)
Chair: G. Bugajak	(Room 1, 1st fl.) section

FRIDAY II, May 5, 2017

16:00-17:00	*Panel discussion*: Proposal for the constitution of a BD course on "Philosophy and Computer Science"
Moderated by G. Basti	(Large Hall, basement fl.)

The time slot for each lecture/talk includes 10 minutes for discussion.

SATURDAY (May 6, 2017)

09:00-09:30	Krešimir ZAUDER and Josip ĆIRIĆ, Philosophy and conceptual networks
09:35-10:05	Gabriela BAŠIĆ, Contribution to discussion on formal vs. informal logic
10:10-10:40	Ethan LANDES, The necessity of the intuitive
Chair: B. Žarnić	(Room 2, 1st fl.) section

09:00-09:30	Tomasz JARMUŻEK and Mateusz KLONOWSKI, Tableau systems for relating logics
09:35-10:05	Kristina ŠEKRST, Formalizing inferential evidentiality: from justification logic to machine learning
10:10-10:40	Goran LOJKIĆ, Cumulative intensional ramified theory of types
Chair: L. Fenton-Glynn	(Room 1, 1st fl.) section

10:40-11:15	Coffee break
11:15 -11:55	Davide RIZZA, Numeral representations of completed sequential processes
12:00 -12:40	Dolf RAMI, Weak Meinongianism and the problem of generalizations with the existence predicate
12:40-13:10	General discussion and closing
Chair: S. Kovač	(Large Hall, basement fl.)

PARTICIPANTS

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