



**University of Belgrade / Faculty of Philosophy Department of
Philosophy**

BOOK OF ABSTRACTS

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PLENARY LECTURE

Alexandru Baltag

(University of Amsterdam)

From degrees of belief to defeasible knowledge

This talk introduces a *probabilistic version* of the so-called *defeasibility theory of knowledge*, championed by Lehrer, Klein and others.

I take as basic the standard Bayesian framework, given by a probability measure interpreted as giving an agent's "degrees of belief". In this setting, I define a number of "qualitative" doxastic attitudes: *absolute certainty* (probability 1), *infallibility* or epistemic necessity (=truth in all possible worlds that are consistent with the agent's information), de Finetti's qualitative *probability ranking* $P \leq Q$ (Q is at least as probable as P), *Lockean belief* B (defined as high confidence, above a fixed threshold), and *its conditional version* $B(P|Q)$ (high confidence in P given Q). I give a complete axiomatization of the logic of these notions, then move to defeasibility theory.

A proposition P is *undefeated* iff its degree of belief stays high (above the Lockean threshold) when any true information is learnt. This is a quantitative version of the "robustness" or stability requirement that underlies the defeasibility theory. Undefeated true belief is neither (positively) introspective, nor closed under conjunction: both P and Q can be undefeated without their conjunction being so. However, there is a *reflexive* version of this concept, definable by a circular definition: let us say that P is **known** iff both P and the fact that P is known are undefeated. This corresponds to a *conscious* type of defeasible knowledge: whenever an agent knows something in this sense, he believes (with high confidence) that he knows it.

I study the logical properties of this concept of knowledge and show that it is very well behaved. The resulting theory fits well with the latest developments in Bayesian epistemology: we show that Leitgeb's recent "stability theory of belief" can be recovered as a special concept in our setting, namely what we call "firm belief": the attitude corresponding to "believing (with high confidence) that you know". Since Leitgeb's notion satisfies all the classical postulates of doxastic logic (KD45) and belief revision theory (AGM), this means that the classical logical notion of belief can be interpreted in terms of Lockean belief and of (our notion of conscious defeasible) knowledge. We also show that Leitgeb's belief and our defeasible knowledge, taken together satisfy Stalnaker's proposal for what he thinks is the "true" logic of knowledge and belief.

We address some possible problems: (1) the *context-sensitivity of knowledge* (its dependence on the underlying partition), and (2) the apparent *failure of qualitative learning to track Bayesian conditioning* (problem spotted by K. Kelly). We answer the first problem by arguing that all knowledge depends on the "relevant questions" (giving the relevant conceptual space). A standard objection against defeasibility theory is that it is too strong: we should only require beliefs to be undefeated by any true "relevant" (or "non-deceiving") information. Context-sensitivity, instead of being a problem, is a solution to this objection: defeaters that do not respect the relevant partition are of the "deceiving" type. As for objection (2), we answer it by requiring knowledge to be justified (in addition to being true and undefeated). The

justification must be in terms of the current evidence and of prior knowledge (possessed before the current evidence was received). When updating with new information, this notion of knowledge **does** track Bayesian conditioning.

PLENARY LECTURE

Kosta Došen

(University of Belgrade)

On exactitude

Abstract: <http://www.mi.sanu.ac.rs/~kosta/O%20strogosti%20u%20nauci.pdf>

On exactitude in science

... In that Empire, the Art of Cartography reached such Perfection that the map of a single Province occupied a whole City, and the map of the Empire a whole Province. In the course of time, these Disproportionate Maps were found wanting, and the Colleges of Cartographers elevated a Map of the Empire that was of the same scale as the Empire and coincided with it point for point. Less Fond of the Study of Cartography, Subsequent Generations understood that such an expanded Map was Useless, and not without Irreverence they abandoned it to the Inclemencies of the Sun and of Winters. In the deserts of the West, tattered Ruins of the Map still abide, inhabited by Animals and Beggars; in the whole Country there is no other relic of the Disciplines of Geography.

Suárez Miranda, *Travels of Prudent Men*, Book Four, Ch. XLV, Lérida, 1658

Another thing

“That’s another thing we’ve learned from *your* Nation,” said Mein Herr, “map-making. But we’ve carried it much further than *you*. What do you consider the *largest* map that would be really useful?”

“About six inches to the mile.”

“Only *six inches*!” exclaimed Mein Herr. “We very soon got to six *yards* to the mile. Then we tried a *hundred* yards to the mile. And then came the grandest idea of all! We actually made a map of the country, on the scale of *a mile to the mile*!”

“Have you used it much?” I enquired.

“It has never been spread out, yet,” said Mein Herr : “the farmers objected : they said it would cover the whole country and shut out the sunlight! So we now use the country itself, as its own map, and I assure you it does nearly as well. ...”

Lewis Carroll, *Sylvie and Bruno Concluded*, Macmillan, London, 1893, Ch. XI, p. 169

PLENARY LECTURE

Michael Griffin

(Central European University, Budapest)

Descartes's modal creationism

Descartes holds that the eternal truths are God's creatures. The Cartesian doctrine appears to imply that God can make any proposition true. Putting this implication together with the assumption that if God make P true, then it's possible that P is true, we get the conclusion that, for any proposition P, it's possible that P is true. Descartes, however, rejects this conclusion. He must therefore reject the implication or the assumption. Some scholars argue that Descartes rejects the quite plausible assumption in order to preserve the implication. I will argue that Descartes is committed to the assumption and rejects the implication. I will conclude that contrary to appearances Descartes has a rather standard view of the relationship between God and modality.

PLENARY LECTURE

Peter Schroeder-Heister

(Eberhard Karls University, Tübingen)

Proof-theoretic semantics and the sequent calculus

In proof-theoretic semantics, the central model of reasoning has been natural deduction. This is due to the fact that Gentzen, even though he carried out all his technical investigations in sequent-style formalisms, equipped natural deduction from the very beginning with a philosophical underpinning regarding the symmetry of introduction and elimination rules. This symmetry was later spelled out in detail by Prawitz in the form of an inversion principle and integrated by Dummett into an encompassing theory of meaning. However, as I have argued elsewhere, the sequent calculus has many benefits that make it superior (or at least not inferior) to natural deduction even from the philosophical side. Here I will present some ideas that discuss the incorporation of features of natural deduction into the sequent calculus. In particular, I discuss the consequences of a left-introduction rule different from Gentzen's that gives implication a rule-like shape, which sheds some new light on the relationship between natural deduction and sequent calculus. I also discuss the symmetry of right and left rules in the sequent calculus that use a principle related to definitional reflection.

PLENARY LECTURE

Sonja Smets

(University of Amsterdam)

The epistemic potential of groups

In this presentation I focus on the ‘epistemic potential’ of a group of agents, i.e. the knowledge (or beliefs) that the group may come to possess if all its members join their forces and share their individual information. Among the different notions of group knowledge studied in the literature, which one can give us a good measure of a group's epistemic potential? A first candidate is ‘distributed knowledge’, which can in principle be converted into actual individual knowledge by means of simple inter-agent communication. However in practice there are many factors which may prevent the full actualization of distributed knowledge. These factors include the group's dynamics, the structure of the social network, the individuals' different epistemic interests and agendas, etc. When we take these realistic conditions into account, a more accurate formalization of a group's potential knowledge can be developed. I show that in interrogative scenarios allowing inter-agent communication as the group's main knowledge-aggregation method, the group's true epistemic potential may well turn out to be very different from both distributed knowledge and from common knowledge (lying instead somewhere in between these extremes). The results reported on in this lecture are based on on-going joint work with A. Baltag and R. Boddy.

SYMPOSIUM ON PROOF THEORY:

Miloš Adžić

(University of Belgrade)

Gödel on proofs and axioms

Kurt Gödel paid great attention to the question: „What are the axioms?“, particularly with regard to new axioms of set theory. This question is partly philosophical. Another equally interesting question: „What is a proof?“ seems not to have excited his curiosity to the same extent. This talk will at least partly explain why this was the case.

Giuseppe Greco

(Joint work with: Minghui Ma, Alessandra Palmigiano, Apostolos Tzimoulis, Zhiguang Zhao)

(Delft University of Technology)

Display calculi in the light of ALBA

This talk focuses on the formal connections which have recently been highlighted between correspondence phenomena, well known from the area of modal logic, and the theory of display calculi originated by Belnap [1, 2, 3, 4].

These connections have been seminally observed and exploited by Marcus Kracht [5], in the context of his characterisation of the modal axioms (which he calls primitive formulas) which can be effectively transformed into ‘good’ structural rules of display calculi. In this context, a rule is ‘good’ if adding it to a display calculus preserves Belnap's cut-elimination theorem.

In recent years, correspondence theory has been uniformly extended from classical modal logic to diverse families of nonclassical logics, ranging from (bi-)intuitionistic (modal) logics, linear, relevant and other substructural logics, to hybrid logics and mu-calculi. This generalisation has given rise to a theory called unified correspondence [6], the most important technical tool of which is the algorithm ALBA.

We put ALBA to work to obtain a generalisation of Kracht's transformation procedure from axioms into ‘good’ rules. This generalisation concerns more than one aspect. Firstly, we define primitive formulas/inequalities in any logic the algebraic semantics of which is based on distributive lattices with operators. Secondly, in the context of each such logic, we significantly generalise the class of primitive formulas/inequalities, and we apply ALBA to obtain an effective transformation procedure for each member of this class.

Time permitting, we will discuss the connections between the ALBA-aided transformation procedure and other similar procedures existing in the literature, developed for instance by Negri, Ciabattoni and other authors.

References:

[1] N. Belnap. *Display logic*. *J. Philos. Logic*, 11:375–417, 1982.

- [2] S. Frittella, G. Greco, A. Kurz, A. Palmigiano, V. Sikimić, *A Proof-Theoretic Semantic Analysis of Dynamic Epistemic Logic*, *Journal of Logic and Computation*, Special issue on Substructural logic and information dynamics (2014), DOI:10.1093/logcom/exu063.
- [3] S. Frittella, G. Greco, A. Kurz, A. Palmigiano, V. Sikimić, *Multi-type Display Calculus for Dynamic Epistemic Logic*, *Journal of Logic and Computation*, Special issue on Substructural logic and information dynamics (2014), DOI:10.1093/logcom/exu068.
- [4] S. Frittella, G. Greco, A. Kurz, A. Palmigiano, *Multi-type Display Calculus for Propositional Dynamic Logic*, Special issue on Substructural logic and information dynamics (2014), DOI:10.1093/logcom/exu064
- [5] M. Kracht. *Power and weakness of the modal display calculus*. In *Proof theory of modal logic*, pages 93–121. Kluwer, 1996.
- [6] W. Conradie, S. Ghilardi, and A. Palmigiano. *Unified Correspondence*. In A. Baltag and S. Smets, editors, *Johan van Benthem on Logic and Information Dynamics*, volume 5 of *Outstanding Contributions to Logic*, pages 933–975. Springer International Publishing, 2014.

Novak Novaković

(Mathematical Institute SANU)

On the size of proofs in classical logic

In this talk we put into focus the size of propositional proofs in classical logic. Besides the obvious importance for applications, proof size is paradigmatic of complexity phenomena in general. We provide an overview of these and make an attempt to use proof size as a first principle when answering such questions as ‘what is a proof system?’

Zoran Petrić

(University of Belgrade)

Notes on categorial proof theory

We give a short presentation of the text entitled “270 Minutes on Categorial Proof Theory”, which is due to appear in *Zbornik radova*, Mathematical Institute SANU - Logic in Computer Science. The aim of that text is to provide an introduction of basic categorial notions to a reader interested in logic and proof theory.

Luca Tranchini

(Eberhard Karls University, Tübingen)

Harmony, rule equivalence and an inferential criterion of synonymy

One way of explaining the notion of harmony is by using the inversion principle. I will draw the attention to the fact that many advocates of the inversion principle implicitly adopt a notion of equivalence between rules. Only together with a notion of equivalence does the inversion principle yield a thorough account of harmony. The reason is that the elimination rules generated by inversion are not the only elimination rules in harmony with a given collection of

introduction rules. Intuitively, any collection of elimination rules equivalent (i.e. interderivable) with the one generated by inversion will also be in harmony with the given collection of introduction rules.

By considering some examples, I will argue that this picture yields a notion of meaning which is too much “extensional” in the sense that on such an account any two interderivable complex sentence are treated as synonymous. I will then suggest that in order to attain a more intensional account, one should abandon the notion of equivalence in favour of a more stricter notion, to be modeled upon the one of formula isomorphism from lambda calculus and category theory.

POSTGRADUATES:

Zdenka Brzović

(University of Rijeka)

The concept of mental illness: problems for naturalist accounts

A central problem in the philosophy of psychiatry is to offer demarcation criterion for distinguishing conditions that are illnesses from those that are not. The issue is whether we can offer an objective grounding to attributions of disorder. The question is how to know whether our views as to what is natural and unnatural in the human condition is based on objective grounds or is it actually driven by social norms. This problem is part of a larger debate in the philosophy of medicine on how to define health and disease. Standardly, two main positions are identified: naturalist and normativist views. Naturalists believe that there should be a value-free, objective basis for the attribution of disease while normativists believe that attributions of health and disease reflect our value judgments.

In this paper I consider what I take to be two most plausible naturalist accounts of disease: the statistical account presented by Boorse (1976, 1977, and 1997) and the evolutionary account offered by Wakefield (1992). Boorse defines disease as abnormal functioning of some bodily system that consists in the failure to conform to the “species-typical design” of humans, which means that statistical deviation can underpin what is meant by disease. Wakefield (1992) defines mental disorder as a harmful dysfunction where natural functioning refers to the functioning as designed by natural selection.

I analyze the criticism against these views offered by Bolton (2008) who argues that there is no way to have an objective, value free account of psychological functioning because our attributions of psychological functions and dysfunctions are always influenced by our social values. I will argue that naturalistic accounts face an even deeper problem, not only are attributions of psychological functions value laden, it is hard to offer an objective basis even at the level of biological functions. For Boorse’s account this was already demonstrated by Amundson (2000), and I will argue that Wakefield’s evolutionary account faces the same problem.

Firstly, I will show that Wakefield’s analysis of natural functioning as functioning designed by natural selection is inadequate for biomedical sciences because most function attributions in biomedical sciences do not rely on such an evolutionist account, which puts his framework at odds with the actual scientific practice. Secondly, I will argue that even on the alternative, non-evolutionary account of biological function (a causal role approach) the problem arises because of the impossibility of this account to provide grounding for objective function attributions. Thus, the only account of functions appropriate for the biomedical sciences faces the problem according to which the decision about what is function depends on the context of investigation, explanatory interests of scientists and the level on which the system is analyzed. This means that the naturalist accounts of disease face the same problem of value-ladenness on the level of biological functions, however, in this case the values in question are arguably epistemic, rather than social.

References:

1. Amundson, Ron. (2000) Against Normal Function. *Studies in History and Philosophy of Biological and Biomedical Sciences*, 31(1): 33-53.

2. Bolton, D. (2008) *What is Mental Disorder?* Oxford University Press, Oxford.
3. Boorse, C. (1976). What a theory of mental health should be. *Journal for the Theory of Social Behavior*, 6, 61–84.
4. Boorse, C. (1977). Health as a theoretical concept. *Philosophy of Science*, 44, 542–573.
5. Boorse, C. (1997). A rebuttal on health. In J. Humber, & R. Almeder (Eds.), *What is disease?* (pp. 1–134). Totowa, NJ: Humana Press.
6. Wakefield, J. (1992). The concept of mental disorder: on the boundary between biological facts and social values. *American Psychologist*, 47, 373–388.

Jonathan Dittrich

(University of Tübingen/Oslo)

Motivating a proof-theoretic understanding of paradoxes for classical logic

Besides formal achievements of different solutions for semantical paradoxes, there has been little said about how to evaluate different approaches. This talk wants to motivate a proof-theoretic understanding of paradoxes for classical logic. In order to do so, the approach will treat formal languages close to scientific theories and their development. One of the most indispensable tools to decide between different incompatible scientific theories were certain virtues. Examples are strength, conservativity, unification, elegance etc. This talk wants to use the methodology of similar superempirical virtues in order to argue for an often neglected analysis of paradoxes, namely a variant of Tennants proof theoretic account (Tennant, 1982, 2014).

This analysis stems from the observation that all of the semantic paradoxes share a property, namely that their proofs cannot be put into normal form. If we try to apply the classical reduction steps to their derivations, we will eventually end up with the original derivation – a behaviour called a reduction loop. This can easily be used to construct a solution for semantic paradoxes by simply excluding derivations from the systems which bear such a looping structure. By paying attention to the proof-theoretic details of semantic paradoxes this analysis is able to offer a solution to these paradoxes, which is likely to fulfil the mentioned virtues.

I shall briefly argue that the solution satisfies various virtues such as elegance and universality. This is due to the minimum of formal machinery needed and the fact that the account captures all semantic paradoxes, including non-reflexive ones like Yablo's paradox (Tennant, 1995). However, I will mainly focus on the aspect of conservativity. By Gentzen's Hauptsatz (and its adaptation for natural deduction by Prawitz) we already know that eliminating the looping derivations from our system will preserve all strictly logical truths for classical logic. However, Tennant's own analysis is done within intuitionistic rather than classical logic and there are derivations of paradoxes in normal form within classical logic (see Tennant, 2014: p. 19). To cope with this challenge, I will introduce a $\neg\neg$ -reduction rule for the classical reductio rule and show that the looping structure can then be found in the alleged counterexamples. Since the analysis of paradoxes then seems to work for classical logic, the resulting system without looping derivations appears to not only exclude the paradoxes but also be highly conservative from the viewpoint of a classical logician. Last, I will consider analogies and disanalogies between the new reduction rule and the classical ones, arguing that some of the motivations for the classical rules (see Prawitz, 1965; Gentzen, 1964) can be applied to accept the new one. Due to the nature of the $\neg\neg$ -reduction rule, the idea of

maximum formulas as unessential pairs of introduction and elimination rules cannot be applied here. However, the reduction step still cuts out 'detours' in the sense that unnecessary assumptions get replaced by their proofs already present in the overall derivation.

References:

1. Gerhard Gentzen. Investigations into logical deduction. *American Philosophical Quarterly*, 1(4):288–306, 1964.
2. Dag Prawitz. *Natural Deduction: A Proof-Theoretical Study*, volume 32. Dover Publications, 1965.
3. Neil Tennant. Proof and paradox. *Dialectica*, 36(23):265–296, 1982.
4. Neil Tennant. On paradox without self-reference. *Analysis*, 55(3):199–207, 1995.
5. Neil Tennant. A new unified account of truth and paradox. *Mind (Forthcoming)*, 2014.

Strahinja Đorđević

(University of Belgrade)

Thank goodness that might be over: did tenseless theorists understand what Prior was trying to say?

In his famous article “Thank Goodness That’s Over” (1959) Arthur Prior challenged the position held by tenseless theorists, claiming it is quite problematic, since the consequences of its accepting can lead to confusion about our undeniable feeling of things ‘ceasing to exist’. Prior holds that sentences like ‘Thank goodness that’s over’ would be pointless according to detensers. If we follow their line of thought the sense of those statements would be lost and therefore our perception of time shattered. The speaker is surely not relieved by the fact that one event is earlier than the other (as tenseless theory would suggest), he is rejoicing because some rather unpleasant event ‘ceased to exist’. Prior argues that in order to account for the real nature of time we must embrace the tensed approach. Therefore, the tensed theory is the only position that can be regarded as capable of explaining the fact that something ‘ceases to exist’.

In years following the publishing of Prior’s paper, many tenseless theorist had criticized his conclusion, accusing him of reducing their arguments to problems concerning: bare facts about language, the untranslatability of tensed discourse into tenseless discourse, ineliminability of indexicals and demonstratives from our temporal discourse. The majority of detensers thought these kind of problems to be the basis of ‘Thank Goodness’ argument, but that view was challenged by some philosophers. Some thinkers, such as Delmas Kiernan-Lewis tend to think that many contemporary advocates of tenselessness, such as D. H. Mellor, fail to recognize or address the actual argument that Prior gives. Kiernan-Lewis claims that an analogy could be made between the well known arguments against physicalism, like the ones used by Frank Jackson and Thomas Nagel, and the argument which, in his opinion, Prior actually uses in his article. He notes that detensers defend the position that tenseless knowledge is complete knowledge simpliciter, but since almost every person is aware of things ‘ceasing to exist’, the tenseless account must be considered false. On the other hand, tenseless theorist, such as L. Nathan Oaklander, claim that Kiernan-Lewis failed to understand what did detensers really try to say. Oaklander also disputes Kiernan-Lewis claim that tenseless position needs to explain how something ‘ceases to exist’, because there is no reason to believe anything actually ‘ceases to exist’ in reality, and assumes that the position

held by Kiernan-Lewis was a result of him confusing tenseless view with sempiternal or God's tenseless view.

The main contribution of this talk is a potential resolution of the problem regarding the true nature of the 'Thank Goodness' argument. I will try to resolve whether Kiernan-Lewis was right when he argued that Prior wasn't understood in the right way by tenseless theorists. The focus will also be on explaining the difference between the two positions (tensers and detensers) and trying to point out what are the strongest reasons to think that one theory is more acceptable than the other.

Jedrzej Grodniewicz

(Joint work with Czajka Bartłomiej)

(Jagiellonian University)

Cognitive role of singular thoughts

In philosophy of language and mind it is common to distinguish two ways of thinking about objects. The first one (*descriptive*) is present when no specific individual is thought about (e.g.: "A lumberjack has to be careful when a tree falls."). The second one (*singular*) – when there is some specific individual that the subject has in mind (e.g.: "My brother is clever").

The front matter of the debate of singular thoughts has always concerned requirements that have to be met for one's thought to be singular. The requirement appealed to most often has been subject's acquaintance with the object of thought. Nevertheless, recently a few authors criticized acquaintance as posing too strict requirement on singular thought. They noticed that agent cannot be acquainted e.g. with objects that she falsely believes to exist (since acquaintance is a genuine relation requiring existence of both *relata*), while thoughts about such objects seem to be cognitively similar to thoughts about objects that agent rightly believes to exist.

In this paper we focus on theories of Crane (2011, 2013), and Jeshion (2010) whose anti-acquaintance stances share a common motivation, i.e. observation that what is distinctive of singular thoughts is that they play a specific *singular cognitive role* in agent's cognitive system. The aim of this paper is to assess whether Crane and Jeshion succeed in explaining the nature of this role.

Crane's explanation of *singular cognitive role* relies heavily on the notion of *mental files* that agent opens when she represents an object and which she further uses to gather information about it. Crane claims that there are at least two types of mental files: singular and general, that vary in terms of types of information that they are used to gather. Singular thoughts are thought *via* a singular mental file, which in turn is the source of their *singular cognitive role*. We argue that Crane fails to provide a viable distinction of singular and general files, and thus fails to spell out the essence of the *cognitive role* of singular thoughts.

Jeshion also speaks about mental files, yet she does not appeal to the problematic distinction into their different types. According to her, singular thinking is just thinking through a mental file (while descriptive thinking involves no files at all). She claims that all mental files are essentially singular, because they have common root with simpler cognitive mechanisms postulated by psychology of visual experience. We claim that Jeshion's theory has at least one, serious weakness. We present an original argument against Jeshion's *Significance Condition* supposed to capture the mechanisms of mental files' initiation. Without good explanation of the

mechanism, Jeshion also fails to outline the cognitive role of singular thinking in necessary details.

We conclude addressing an argument provided by Sawyer (2012) that distinction into thoughts that play the *singular cognitive role* and these that do not play this role can be reconciled with the standard acquaintance requirement. We claim that her argument fails. Even though Crane's and Jeshion's theories require important adjustments, the investigation of the *singular cognitive role* is both promising and original direction of research within the singular thoughts debate.

References:

1. Crane, T. (2011). The singularity of singular thought. *Aristotelian Society Supplementary Volume*, 85(1):21–43.
2. Crane, T. (2013). *The Objects of Thought*. Oxford University Press.
3. Jeshion, R. (2010). Singular thought: Acquaintance, semantic instrumentalism, and cognitivism. In Jeshion, R., editor, *New Essays on Singular Thought*, pages 105–141. Oxford University Press.
4. Sawyer, S. (2012). Cognitivism: A new theory of singular thought? *Mind and Language*, 27(3):264–283.

Laurenz Hudetz

(University of Salzburg)

Causal sets and discrete linear structures

This talk examines how causal set theory is related to Tim Maudlin's theory of linear structures, which is an alternative to standard topology and has been developed in Maudlin's recent monograph *New Foundations for Physical Geometry* (2014). The theory of linear structures and causal set theory share some of their main motivations: (a) both are intended for analysing discrete spacetime structures, and (b) both are based on the fact that the class of future-directed continuous timelike curves in a strongly causal Lorentzian spacetime determines its topology (cf. Hawking, King & McCarthy 1976, Malament 1977). Although the theories are very similarly motivated, it has not yet been investigated how they are related to each other. The principal aim of this talk is to provide a thorough answer to this question.

My main theorem says that the category of causal sets is isomorphic to a specific subcategory of discrete linear structures, namely to the category of full locally finite one-way linear structures. It follows that causal set theory can be done within the more general framework of Maudlin's theory of linear structures. Moreover, I show that the outward topology (as defined by Maudlin) of a given locally finite one-way linear structure is identical to the Alexandrov topology on the corresponding causal set. This ties in nicely with the fact that the manifold topology of a strongly causal Lorentzian spacetime also coincides with its Alexandrov topology.

These results are important for the following reasons: (1) They might be relevant for treating the inverse problem of causal set theory. Whether a solution can actually be achieved using the theory of linear structures is an open question. It seems to be an interesting new strand of research. (2) The results are relevant for evaluating Maudlin's theory. The value of his theory depends crucially on whether it is true that (a) its conceptual framework is as expressive and fruitful as that of standard topology when it comes to describing well-known

discrete and continuous structures such as causal sets, Lorentzian manifolds, Minkowskian spaces, Euclidean spaces etc. and (b) it is even more expressive and fruitful when it comes to analysing topological aspects of discrete structures.

A criterion for (2a) is whether all well-known structures mentioned above can be characterised purely in terms of the theory of linear structures. My theorems provide a characterisation result for causal sets and show that, in this particular case, Maudlin's definitions of topological notions yield the right outcome. So the theorems constitute a first step towards evaluating (2a), and their proofs provide a general approach for treating similar characterisation problems.

A criterion for (2b) is given by (1). If the theory of linear structures indeed helps to solve the inverse problem, it is thereby proven fruitful in the sense of (2b). Otherwise, we have no positive support for (2b) up to now.

Pavel Janda

(University of Bristol)

Measuring inaccuracy of uncertain doxastic states in many-valued logical systems

We will propose an alternative philosophical approach to the representation of uncertain doxastic states. We will motivate our new approach by showing that we cannot measure inaccuracy of uncertain doxastic states in Belnap's four-valued logic satisfactorily. Eventually, we will propose conditions of rationality for uncertain doxastic states represented by our new system.

Imagine an agent who uses single real-valued numbers from the unit interval to represent her credences. For example, she represents her credence that a fair coin lands heads by 0.5. Imagine that she is also concerned about the inaccuracy of her credences. We claim that for such an agent the current approach to measuring inaccuracy of uncertain doxastic states is inappropriate when we consider Belnap's four-valued logic. There will be a situation in which an inaccuracy measure, the Brier score in our case, will either return a completely wrong result or an agent's credence will be assigned an inadequate inaccuracy score.

This issue will motivate an introduction of an alternative philosophical approach to the representation of uncertain doxastic states. We will use an ordered pair of numbers (x, y) instead of a single number to numerically represent an agent's uncertain doxastic state with respect to a proposition X . We will modify the Brier score to develop an inaccuracy measure B^* that can be used to measure inaccuracy of uncertain doxastic states represented by ordered pairs, and we will show that B^* is a legitimate inaccuracy measure. It means that B^* has all the properties that legitimate inaccuracy measures are required to have. We will show that the system of ordered pairs together with B^* is appropriate for measuring inaccuracy of uncertain doxastic states in Belnap's four-valued logic.

To develop the theory further, we will introduce and argue for conditions of rationality for uncertain doxastic states represented by ordered pairs in Belnap's four-valued logic. We will use the structure of the argument that epistemic utility theory uses to justify Probabilism. We will concentrate on Belnap's four-valued logic as our prime example, but the system of ordered pairs and the argument are easily applicable to other systems like Logic of Paradox or Kleene three-valued logic.

Marko Jurjako

(University of Rijeka)

**Are psychopaths irrational? The problem of interfacing
rationality and instrumental learning**

Heidi Maibom in her seminal paper “Moral Unreason: The Case of Psychopathy” has argued that some experimental evidence shows that psychopaths have an impaired practical rationality.¹ The issue has an important place in recent philosophical debates. Sentimentalists maintain that these subjects exemplify the case of the immoral rational agent.² Such a case would undermine the rationalist account of moral judgement and motivation. Rationalists, instead, question the rationality of psychopaths.³ The outcome of this debate is relevant also for the discussion of the legal and moral responsibility of psychopathic offenders.⁴

Maibom and other philosophers interested in the rational capacities of psychopaths have relied on numerous empirical studies that focus on their poor behavioural inhibition in *instrumental learning* tasks.⁵ This learning involves the association in a certain situation of triggering stimuli, the subject's response and rewarding or punishing stimulus.⁶ For example, a child learns to raise his hand, the response, when the teacher is in the class, the situation, given that he will receive the attention of the teacher, a rewarding stimulus in this case.

In this paper we argue that the experimental evidence that Maibom uses cannot directly support the conclusion that psychopaths are impaired in their practical rationality.⁷ Specifically, we aim to show that transferring knowledge from these empirical investigations to solve the problem of the rationality of psychopaths requires taking stance on several conceptual issues concerning the formulation of requirements of practical rationality. However, it is very important to stress here that we do not address all the arguments for the same conclusion advanced by Maibom in her paper.

We proceed as follows. Firstly, we describe the diagnosis of psychopathy and briefly survey experiments that show peculiarities in instrumental learning in psychopaths. Secondly, we engage with Maibom's argument that these peculiarities imply that psychopaths are instrumentally irrational. Finally we advance our criticism of Maibom's interpretation of these experiments.

¹Maibom 2005. See also Maibom 2010.

²Nichols 2004, Prinz 2006.

³Maibom 2005, Maibom 2010, Kennett 2010.

⁴Malatesti and McMillan 2010.

⁵See Maibom 2005, 2010.

⁶See e.g. Blair, Mitchell and Blair 2005, Blair, Colledge, and Mitchell 2001, Lykken 1957, Mitchell et. al 2002, Newman, Patterson, and Kosson 1987.

⁷Maibom 2005, Maibom 2010, and Kennett 2010.

Hilbert's rescue of mathematics

In this paper, I will argue for the thesis that Hilbert's approach to axioms rescued mathematics from the single-minded focus on truth as correspondence to reality. Historically, mathematical axioms were considered to express self-evident truths—truths about an abstract reality of such a basic kind that they seemed true beyond any doubt. This implied that the investigation of mathematical axioms was restricted to describing an abstract reality—a rather uncreative process. Hilbert, however, proclaimed a version of coherentism. According to him, mathematical axioms should be regarded as true if they form a consistent system, i.e. a system that entails no contradictions. This approach to mathematical axioms is faced with the many problems a coherence theory of truth brings with it. Even though Hilbert was not able to solve these problems, he could still rid mathematics from the burden of looking for axioms that correspond to an abstract reality. The crux of Hilbert's rescue of mathematics lay in his conception of axioms. He regarded axioms as partially uninterpreted sentences—sentences whose non-logical primitive concepts are empty placeholders open for interpretation. This enabled Hilbert to avoid reference to an abstract reality and nevertheless provided a criterion for identifying potentially fruitful axiom systems. Thus, my claim is that Hilbert's approach to axioms frees mathematics from the single-minded focus on truth as correspondence to reality. By claiming that we need only demand that axiom systems be consistent, Hilbert shifted the focus in mathematics from questions of truth to questions of deductive relationships. He thus removed the stigma of investigating axioms that do not describe a known 'reality' and cleared the way to mathematical creativity: new mathematical theories could be created by simply laying down new axioms. So, even if Hilbert did not succeed in solving the philosophical problems entailed by his coherentism, his approach can be regarded as a kind of rhetorical device that allowed mathematicians to set aside the question of truth and to focus on axiom systems that are interesting on some standard other than truth.

Literature:

1. Frege, Gottlob (1980): *Philosophical and Mathematical Correspondence*, Blackwell (Oxford).
2. Hilbert, David (1999): *Foundations of Geometry*, Open Court (La Salle, Illinois).
3. _____ (2004a): "Die Grundlagen der Geometrie", in: Michael Hallett and Ulrich Majer (eds.): *David Hilbert's Lectures on the Foundations of Geometry 1891-1902*, Springer (Berlin), pp. 72-123.
4. _____ (2004b): "Grundlagen der Euklidischen Geometrie", in: Michael Hallett and Ulrich Majer(eds.): *David Hilbert's Lectures on the Foundations of Geometry 1891-1902*, Springer (Berlin), pp. 221-286.
5. _____ (2004c): "Elemente der Euklidischen Geometrie", in: Michael Hallett and Ulrich Majer (eds.): *David Hilbert's Lectures on the Foundations of Geometry 1891-1902*, Springer (Berlin), pp. 302-395.
6. Hudry, Jean-Louis (2004): "True Axioms and Axiomatic Truth", in: Libor Běhounek and Marta Bílková (eds.): *The Logica Yearbook*, Filosofia (Prague), pp. 177-187.
7. Olsson, Erik (2014): "Coherentist Theories of Epistemic Justification", in: The Stanford Encyclopedia of Philosophy (Spring 2014 ed.), URL = <<http://plato.stanford.edu/archives/spr2013/entries/justepcoherence/>>.

8. Resnik, Michael D. (1974): “The Frege-Hilbert Controversy”, in: *Philosophy and Phenomenological Research* 34 (3), pp. 386-403.
9. _____ (1980): *Frege and the Philosophy of Mathematics*, Cornell University Press (Ithaca and London)

Ásgeir Berg Matthíasson

(University of St Andrews)

Turing’s objections to Wittgenstein

Wittgenstein’s *Remarks on the Foundations of Mathematics*, published posthumously in 1956, have not been nearly as influential as his other work, with G. Kreisel famously describing it as an “surprisingly insignificant product of a sparkling mind”. Other early commentators had a similarly low opinion of the remarks found therein. It is safe to say that it were Wittgenstein’s remarks on Gödel’s theorem and consistency which raised the most ire of mathematically minded philosophers and logicians, especially the remarks contained in Appendix III to Part I of the *Foundations*. These remarks were among other things taken to show that Wittgenstein did not understand the role consistency plays in the proof of Gödel’s theorem and logic in general.

In the *Lectures on the Foundations of Mathematics*—material not accessible to the early commentators—Wittgenstein makes further points regarding the role of consistency in formal systems, arguing that it is not of much importance, and advocates the abandonment of the classical *ex falso*-rule. When that is kept in mind, Wittgenstein’s other remarks should be somewhat vindicated in the eyes of a modern reader, familiar with the work of the paraconsistent logicians and dialetheists. There are however, serious objections remaining to Wittgenstein’s view, two of which were raised by Alan Turing, who attended the lectures.

Turing’s first objection is that it is possible to derive an arbitrary sentence without actually using the *ex falso*-rule, a point well known to the student of propositional logic. Turing’s second objection is what we can call the “no falling bridges”-objection. It goes as follows: Logical derivations are used in complicated practical affairs, such as the building of bridges. Sometimes it might happen that we inadvertently derive an arbitrary proposition from a latent contradiction, despite trying to adhere to Wittgenstein’s advice of following the *ex falso*-rule—with the consequence that we fail in our project and our bridge collapses. To avoid this situation, we should be worried about the consistency of our formal systems.

In his 1977 paper, Charles Chihara takes up Turing’s objections and fiercely criticises Wittgenstein for neither anticipating Turing’s points nor responding to them properly. He further develops Turing “no falling bridges”-objection. In this paper I will explain Wittgenstein’s underlying motivations for his view and argue that the Turing-Chihara objections against him do in fact fail, more specifically that any nice paraconsistent system does in fact prevent the situation from the first objection from arising and reduces the second case to a mere calculation mistake, as Wittgenstein had argued all along, *contra* Chihara.

Janko Nešić

(University of Belgrade)

**“Emergentist“ Russellian monism or that obscure
subject of panpsychist’s desire**

I argue that Sydney Shoemaker’s elusive account of emergent properties can be used to make sense of an emergentist Russellian panpsychism and help us resolve the subject combination problem. Shoemaker’s account, somewhat modified, should be coupled with Russellian monism to yield a more preferable and plausible „*emergentist*“ *Russellian monism*. A different notion of emergence could help us make a case for a more plausible emergentist Russellian monism. Quotation marks show that it isn’t really an emergentism, neither is it reductionism, but something in-between. This way constitution could be avoided, but also radical, brute emergence. But some alterations will have to be made in Shoemaker’s account.

Although panpsychism can be an appealing mind-body theory it suffers from a severe problem of combination. Combination problem arises when we try to understand how o-consciousness comes from fundamental micro-consciousness. This problem is especially hard when it comes to subjects and how macro-subjects arise from micro-subjects.

Chalmers argues against plausible emergentist Russellian monism in which emergence is considered as brute and o-experience is strongly emergent on microexperience. Like in the case of British emergentism macro facts are not predictable from microphenomenal facts. Perhaps a different notion of emergence could solve some of the problems and strengthen the case for emergentist Russellian monism? I think this could be done with Shoemaker’s (2002, 2007) account of emergence, but it has to be altered.

Shoemaker claims that when micro-entities are combined in an emergence engendering way they have two sorts of micro-structural properties. First are specified entirely in terms of the *micro-manifest* powers of the constituent micro-entities together with how these micro-entities are related. These refer to micro-manifest powers only are called by Shoemaker Type-1 properties. The emergent properties are Type-2 micro-structural properties and „are specified in terms of all of the powers, micro-latent and micro-manifest, of the constituent micro-entities“ (2002, 56).

A satisfying reworking of Shoemaker’s emergence has been done by Warren Shrader (2009) and I will outline it in detail. Such „emergence“ can also preserve the causal closure of micro-physical, if one wants to hold to it. Shoemaker’s emergence violates the closure, but Shrader argues that by substituting the nomological dependence of micro-latent powers on micro-manifest powers with causal dependence. O-experiences are thus present (as -latent powers in Shoemaker’s account) at the micro-level and fundamental.

I will show how applying the reworked Shoemakers’s account of emergence to Russellian monism helps us avoid the dreaded subject summing problem. I will also discuss the pros and cons of this „emergentist“, yet reductive, form of Russellian monism.

There is something intuitively true about Shoemaker’s proposition on emergence and this possibility was already present with Broad. Whoever thinks that panpsychism is more plausible than physicalism, applying this account to panpsychism can help her argue for a more coherent and appealing position. Since this is a kind of crossover between reductive and emergent Russellian monism it seems no problem of mental causation should resurface. This kind of panpsychism has an advantage because it does not appeal to any mysterianism about phenomenal bonding or to brute emergence. There is no need for any kind of phenomenal bonding, so it could be a nice way to get round the combination problem. It still seems somewhat obscure, though.

Edi Pavlović

(Central European University, Budapest)

Proof-theoretic analysis of the quantified argument calculus

This paper is a part of a larger work which explores the proof-theoretic properties of the Quantified Argument Calculus (Quarc). Here we focus on the more formal and technical results concerning the system. Quarc, in its formal presentation used here, was developed by Hanoch Ben-Yami in (Ben-Yami 2014). Quarc is a quantified logic system distinct from the standard Predicate Calculus, most notably, in allowing both the singular and the quantified expressions in the argument position of a predicate. Moreover, it models some ubiquitous features of a natural language, like anaphors and reordered predicates in its base language. It also includes a rule for instantiation, which allows the derivation of particular from a corresponding universal statement. The focus here will be specifically on what we label Quarc_B , or base Quarc, which does not contain the rules for identity or instantiation.

In the first section of the paper, after presenting Quarc_B , we develop LK- Quarc_B , a sequent-calculus representation of Quarc_B . We then demonstrate the deductive equivalence of the two. The more demanding proof here is the one that shows every Quarc_B proof has a corresponding (given standard translation) derivation in LK- Quarc_B . The proof relies on the fact that every line of a proof in a Suppes-Lemmon style of natural deduction corresponds to the conclusion of some proof. It provides a procedure for constructing a segment of a derivation in LK- Quarc_B for every derivation rule of Quarc_B (Premise Introduction included), such that the endsequent corresponds to the line with the application of the rule, and the initial sequents to the lines that rule depends on (and some trivial lemmas). This also establishes completeness of LK- Quarc_B .

In the second section we then prove the Cut elimination theorem for LK- Quarc_B . The proof is adapted from (Gentzen 1934) and focuses mostly on the specifics of Quarc. From the Cut elimination theorem the Sub-formula property immediately follows. In the third section of the paper, we employ the Cut elimination theorem to demonstrate that instantiation is not derivable in LK- Quarc_B , and thus likewise in Quarc_B . The proof shows there is no cut-free derivation of a sequent corresponding to the instantiation rule, and given that every sequent is derivable in a cut-free fashion, this demonstrates instantiation is not a part of the LK- Quarc_B .

In the final section of the paper we indicate some implications of Quarc and the proof-theoretic properties of LK- Quarc_B , as well as discuss how this formal paper fits into the broader body of work.

Vincent Peluce

(Central European University)

Opposite motion in Anaximander's A26

I argue that Anaximander's argument in A26 for the necessity of the earth's rest makes use of the *exclusion of the compresence of opposites* insofar as it rejects the possibility of simultaneous motion in opposite directions with respect to a thing's whole. Anaximander's argument can achieve conclusion of the earth's rest with this principle or a stronger one that rejects *all* movement in opposite directions, *including expansion*. I argue that this stronger

premise could not have been what Anaximander had in mind for considerations having to do with Anaximander's cosmogony and his views on climate change. Lastly I examine an objection to my view. My arguments allow for the possibility that the kosmos be simultaneously expanding such that relations between its parts are preserved. I suggest that Anaximander could have had a relational view of motion and so been able to avoid this possibility.

Antonio Piccolomini d'Aragona

(Aix-Marseille University (CEPERC) "La Sapienza" University of Rome)

From proofs to grounds. Topics in latest Dag Prawitz's semantics

Valid inferences admittedly confer conclusive evidence, and proofs are epistemically compelling only insofar they involve such a kind of acts. But why and how valid inferences have this power? And which is the connection between them and proofs? Fundamental questions of this kind are central in Dag Prawitz's recent *theory of grounds*.

Prawitz uses the term 'ground' to have a name on what a person needs to be in possession of in order that her judgments are to be justified. For any logical constant c , he introduces a primitive operation on grounds Gc and offers clauses fixing what counts as a ground for formulae having c as their main sign; reductive operations are then defined through reducibility equations. An inference is described as the application of an operation on grounds for the premises, whereas in valid inferences the operation always yields a ground for the conclusion. With respect to previous proof-theoretic formulations, the relationship between proofs and valid inferences is finally reversed; proofs are finite chains of valid inferences, and as such they come to have a strong operational content – to use a widespread terminology, they are not object but processes. However, a typically constructivist question still moves in the background: how should evidence be characterized? We issue this topic within the aforementioned ground-theoretic framework, and in two steps.

First of all, we investigate Prawitz's idea that BHK-constructions do not serve the purpose. To tell the truth, Prawitz himself had previously proposed a way out for BHK-constructions to plausibly stand for evidence; this was through a more general notion of categorical proof and a simultaneously recursive definition enriched with 'recognition functions' denoting insights of constructions. But in this way one anyway loses the proofs-as-chains conception. We will nonetheless see that 'recognition functions': 1. introduce relevant epistemic import, opening the way to a deeper analysis of the operational content of proofs and thus improving both Kreisel's and Dummett's clauses; 2. can be seen as 'tensed' operations, approximating to an inferential behavior; 3. involve decidability problems on implication and universal quantification, and could perhaps be questioned as for their primitive character. This last problem is moreover shown as occurring also in ground-theoretic operations.

Finally, we will take into account a crucial problem posed by Prawitz himself: if grounds are to denote evidence, the property of being a ground should be decidable. According to Prawitz, who also proposes a concrete way to approach the problem, we should be sceptical about positive answers just in the same way as we should be critical towards Kreisel's assumption of "construction k proves A " as a decidable relation.

Işık Sarıhan

(Central European/Fribourg University)

**Applied metaphilosophy: how can we accelerate
the pace of progress in philosophy?**

In this paper, I will be concerned with the question of why progress in regarding the solution of philosophical puzzles seems to be very slow at best and non-existent at worst, and present a candidate answer to the question which I hope will have constructive implications for the field. Philosophers who reflect on the issue of progress in philosophy usually tend to investigate the nature of philosophy, the analytic methods we are using, and the nature of knowledge. Not much attention is given to the practical, social, professional and organizational side of the issue. The question of why there hasn't been any progress in philosophy might have a very simple and not-so-philosophical answer: We are not doing it properly. We are not doing it properly not in the sense of reasoning in a wrong way or using the wrong tools, but we are just not spending enough time on it, not putting enough effort in it, and we do not have the right kind of social structures within the profession, structures that would lead to more fruitful research by establishing a division of labour and organizing the knowledge produced. In the real world, most philosophers spend most of their work time not reflecting on philosophical questions per se, but with other academic burdens, and the social exchange between philosophers are done in a way that is too slow and much less systematic than it can ideally be. In this paper, I will present a thought experiment which involves a large group of imaginary philosophers who conduct their professional work in a manner different than how it is conducted in the actual world today. The researchers involved with this imaginary international organization, "The Philosophy Factory" (PHACT), are not burdened with typical academic activities, and their prestige within their field isn't measured by publications. Instead, these philosophers work just as philosophers, they collectively work on philosophical issues with a well-defined methodology established with mutual agreement, they work in a way similar to how laboratory scientists conduct their professional work every day. Each philosopher has a duty assigned in line with her theoretical interests, like reviewing literature to reconstruct arguments, working to ascertain the logical validity or invalidity of such arguments, scrutinizing the validity of the work done by her colleagues, thinking of novel solutions to philosophical puzzles, or writing a report about the "findings" of her local branch and announcing it to other branches worldwide for these reports to be collected and compared globally. All this collective research contributes to a slowly growing permanent online database and discussion platform everyone can reach. I will provide this thought experiment not to prove that the lack of organizational rigor is the primary cause behind the lack of progress in philosophy, but to put forward a positive proposal to point towards possible future structures of professional conduct, which also have a surprising side-advantage of creating more jobs for philosophers.

Doris Schneeberger

(University of Salzburg)

A proposal for a universal declaration of animal rights

Animal ethics has a prime role when it comes to fighting injustice, cruelty and exploitation which animals are suffering from around the world. My argumentation aims at

improving animals' lives by providing and provoking critical reflection on how we (ab)use and (mis)treat animals.

In this talk, a proposal for a future Universal Declaration of Animal Rights is presented. Alongside the Universal Declaration of Human Rights, this proposal provides a basis for a discussion about animal rights concerning diverse aspects of animal life and the quality of it. The normative reasoning for the acknowledgment of animal rights presented in this presentation is based on animal interests, capabilities and needs. In this talk, animal rights will be discussed regarding many aspects of a "good" animal life. Next to the basic and most important rights (right to life, right to proper nutrition and shelter, right to freedom), also social rights (right to enjoy social (and possibly also sexual) relationships, family, love, procreation...) or political rights will be discussed. Some of the proposals and ideas presented might still be unusual, for example a right to love and be loved.

The major philosophical background (inter alia) made use of in this presentation is Martha Nussbaum's Capability Approach. Additionally, in order to clarify what exactly is meant by the proposed rights, they will finally be classified in Stig Kanger's logic system of possible types of rights. Moreover, imaginable political and juridical representation of animals in a society which respects human and animal rights will be addressed shortly. Animal dignity is, of course, a central metaphysical concept when it comes to discussing animal rights; it will thus be mentioned, as well. One main question thematised in this talk is whether some animal species can be regarded as persons. If the answer to this question is affirmative, it surely is interesting to reflect on normative consequences regarding the treatment of animals belonging to these species.

Mandy Stake

(University of Salzburg)

Understanding the underlying problems of the connection between causality and time

Causality and time are often seen as closely linked both in science and everyday life, although the terms in question are not well understood yet. Mostly, we connect causal sequences to temporal sequences such that these links represent the connections of events due to their space-time positions: we divide events into causes and effects, which occur in a chronological order from past to present and future events. Thus, our understanding of causality depends strongly on our understanding of time or chronological order.

But there are a lot of difficulties concerning the linkage between causality and time combined with today's standard scientific paradigm. This is why more recent attempts focus on the unreality of time or causality. Timeless approaches have been developed because our two most well-confirmed theories of quantum mechanics and general relativity are inconsistent with another, which is why the time variable is avoided entirely. Not only are these attempts timeless, but they also appear to lack a notion of causation, although this problem is being handled with quasi-causal chains. Since we see causality and time as closely linked, we cannot give up either of them without any good justification. However, there are also a lot of different concepts regarding the structure of reality, where time is always seen as one-dimensional – but we clearly reached a point, where we can't explain certain phenomena anymore.

This gives us a good reason to change more auxiliary assumptions concerning causality and time, and to analyze the underlying problems of change and identity over time more deeply. I will examine the basic properties of the terms 'causality' and 'time' and analyze how

they relate to each other. Beyond this, I will argue for new attempts which focus on the underlying problems and lead to new “out-of-the-box-ideas”: Only very few scientists have taken into account that time might not be one-dimensional. Such ideas get ridiculed very rapidly because of the given scientific paradigm and its many successful predictions. Despite these prejudices, I will explore the meaning of such new accounts. The resulting insights may lead us to a new understanding of time and give us a reason why these “alien” assumptions should at least be discussed.

Gašper Štukelj

(University of Ljubljana)

Quine and modal logic

In my presentation I attempt to give a short but comprehensive overview of Quine's attitude against modal logic. To do so, Quine's three most common arguments against introduction of modal terms in logic are presented and critically analyzed. Namely argument of »two-legged mathematicians and reasonable cyclist«, argument of »queer congruence« and argument of »referential opacity«. Furthermore, by taking in consideration Quine's notion of »analytical necessity« in his earlier writings (1943) I also take a look at Quine's ambiguous use of notion of »necessity« in his famous argument against analytical sentences in *Two Dogmas of Empiricism* (1951). Some doubts are casted on respected argument. But Quine, in his writings, does not only argue against modal logic and despite harsh critique, later on also provides some considerable notes on the subject. I try to fully develop some implicit and interesting ramifications of those notes accompanying his arguments for rejecting modal terms. In his late article *Worlds away* his attitude shifts in favour of some modal theories. I argue Quine manages to provide a strong support for accepting theory of rigid designators (as his explicit intention is to do so). Before that, quick reading of earlier article *Three Grades of Modal Involvement*, in which Quine already abandons his rigorous rejective position, is also given. I argue that with his late articles Quine puts himself side by side with the very same authors or rather theoretical positions he was criticising before (although unsuccessfully so, I believe).

Key words: Quine, modal logic, necessity, possibility, Kripke, Lewis, analyticity

Oliver Istvan Toth

(Eotvos Lorand University, Budapest)

Spinoza's theory of consciousness – an argument for the distinction between access and phenomenal consciousness

Spinoza's treatment of consciousness presents a problem because of Spinoza's denial of a sharp distinction between human and non-human, or even between animate and inanimate beings. Most recent attempts to reconstruct Spinoza's theory of consciousness in a consistent way have focused on presenting a view that is both Spinozistic enough – in the sense that it does not admit a “dominion within a dominion” – and commonsensical enough –

in the sense that it does not imply that the toaster is conscious in the same way as humans are (Garrett, 2008; LeBuffe, 2010; Martin, 2007; Nadler, 2008).

In my presentation I introduce an interpretation of consciousness by arguing that consciousness in Spinoza ultimately depends on knowledge in two ways. First, I argue that even though Spinoza does not distinguish between phenomenal and access consciousness, we should do so. Access conscious are those mental states which can rationally coordinate the subject's speech, action and inferences (Kim, 2010, pp. 310–311). These are in Spinoza mostly adequate ideas of the intellect, by which the agent can act and reason. Phenomenal conscious are mental events that have a special 'what is it like' character (Kim, 2010, pp. 304–306). By definition, only temporal mental events can have this character (Crane, 2001, pp. 105–108), therefore adequate ideas of the intellect, which constitute the eternal part of the mind, cannot be phenomenally conscious. Thus, my inadequate ideas of imagination constitute the phenomenally conscious experience.

In Spinoza every finite mode is constituted by other finite modes, which are its constituents, like in the case of a red ball among others the redness, roundness, plastic matter etc. I claim that the adequacy of our ideas should be understood as the degree of how fine grained we conceptualize the content of our phenomenally conscious experience, more specifically, the adequate ideas of the mind are the concepts with which we pin down and make accessible the conceptual character of the experience.

This picture presents a threefold distinction: the Spinozistic subject has adequate ideas, which form its access conscious but not phenomenally conscious concepts and beliefs with which it can handle its phenomenally conscious experience. The ideas of imagination present the phenomenally conscious experience of which those elements that can be conceptualized distinctly by the mind using its adequate ideas form the both access and phenomenally conscious conceptual content of its experience, while those elements that are present confusedly, constitute the phenomenally but not access conscious non-conceptual richness of experience. I claim that through this interpretation I am able to reduce all cases which LeBuffe called extensional uses to cases of knowledge use, which may not solve the question regarding the consciousness of toasters, but at least can show that Spinoza had a consistent theory of consciousness.

Georgiana Turculet

(Central European University)

**The least evident and discussed inconsistencies in 'Refugee Law'.
Whose responsibility is the Syrian refugee crisis?**

The recent Syrian refugee crisis opened a debate on the under-theorized issue of migration law regarding the status and the rights of refugees and asylum seekers. According to UNHCR estimates, Turkey accommodated within its jurisdictional boundaries, since the conflict in Syria begun, the most conspicuous number of refugees (around two million), but none of them recognized legally as a refugee. Turkey, one of the signatory states of the 1951 Geneva Convention, still applies "geographical limitations", namely does not grant refugee status to non-European to be-refugees, but extends to the latter a status of 'temporary protection'. The paradox is that Turkey grants a legal refugee status to European applicants (consider the very trivial number of applicants in need of refuge from Europe after 1951),

whereas millions of non- European ‘proper’ refugees, including those currently in the country won’t be granted refugee status. What can we learn philosophically from this law and practice?

Most philosophers concur with granting refugees a fundamental human right, in line with the Kantian hospitality principle, to sojourn in other territories *temporarily* and also more *permanently*, including a lifetime. It is incorporated in Geneva Convention on the Status of Refugees, as the principle of “non-refoulment” (United Nations, 1951), obliging signatory states not to forcibly return refugees and asylum seekers to their countries of origin, if doing so would endanger their life. Furthermore, asylum seekers and refugees’ claims to admission and more broadly to human rights protection are legally incorporated in the international human rights regime, and subsequently accepted by states (Benhabib, 2004).

The fundamental human right to admission regards the admission of the asylee and refugee and not that of immigrants whose admission remains “a privilege”, in the sense that it is up to the sovereign to grant such “contract of beneficence” (Benhabib 2004). David Miller argues that when it comes to protecting human rights, states’ action, should reflect primarily the ‘terms’ of states, as they see fit: “your human right to food could at most impose on me an obligation to provide adequate food in the form that is most convenient to me (i.e. it costs me the least labor to produce), not an obligation to provide food in the form that you happen to prefer”; furthermore, states do not have a duty to automatically admit refugees, if for example, other similarly well off states can admit them, and the principle of non-refoulment is fulfilled (Miller, 2013). Miller rules out the theoretical possibility of human rights violations, in claiming that a state can deny entry to refugees, only if they are not returned to the country of origin and third countries, where their human rights will be violated, and provided that some other state would take charge of them. Miller’s state-centrist view assuming the point of view of states primarily, and second, wrongly assuming that the only theoretically salient feature is when refugees do not receive admission, and as a result, their human rights are violated, has pernicious implications. Alternatively, I argue that human rights are possible primarily when we view their defense as a primary moral concern, rather than instrumental and contingent upon what states see fit. I propose instead a philosophical view that genuinely assumes and act upon the need of refugees primarily, in both being admitted and rejected to sojourn in new territories.

Boyan Vassilev

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The explanatory value of analytical behaviourism

Analytical (also called philosophical) behaviourism has long been considered problematic, refuted and, in the end of the day, discarded position (Tanney 2015). It is, however, quite sound and superior alternative to dualism. Our commonsensical vocabulary includes words that, allegedly, denote “mental states”. Such “mental states”, according to many philosophers, have the properties “internal” and “private”. Furthermore our knowledge about them is “immediate”. This means that “mental states” are accessible only in a first person perspective. People, however, are constantly talking about their own “private” and “inner” experiences and are ascribing such experiences to other people. This leads philosophers to the so called “problem of other minds” — if “mental states” are “private” and inaccessible to another person, then how can I possibly know that other creatures, although behaving like me, are not just automata? This kind of skepticism and the (explicit or implicit)

desire to preserve some kind of dualism leads philosophers to some ridiculous concepts like “philosophical zombies” — creatures which have the same physical structure (human anatomy) like ours, but, allegedly, lack “conscious experience”. The latter is obviously understood as something that does not obey the laws of our known physical universe (i.e. “mental states” are grasped as something extra- or non-physical). However, I’ve never witnessed something that isn’t physical (and I’ve never heard of confirmed evidence for the existence of such entity). This leads us to a question: how is it possible that we (mainly us, philosophers) talk about entities that aren’t physical, and, subsequently, aren’t accessible for scientific observation? Science is the measure of all things, as Wilfrid Sellars once famously said, and science is our contemporary ontology (and there is no place in contemporary academia for talking about the existence extra-scientific (supernatural) entities). Thus, the answer (or, to be more precise, the inference to the best explanation) of an analytical behaviourist is simple: when we use mentalistic words we actually talk about (quite observable) behaviour and/or behavioural attitudes. This is what I’m arguing for: analytic behaviourism is the only plausible position that does not conflict with our contemporary ontology (i.e. science) and it is the least problematic (philosophical) explanation of behaviour.

Jonas Werner

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What grounds contingent grounding?

In the recent literature about grounding and metaphysical priority, the thesis that grounding is *contingent* gains popularity. It is argued that some facts may ground another fact even if the former facts obtain in a possible world in which the latter fact fails to obtain. One persuasive type of examples that has been put forward are cases of universal quantification. If the fact that all my hats are green is fully grounded in facts about the three hats that I have, then this is a case of contingent grounding, because in some possible world all these facts obtain, but I have an additional blue hat. In this paper, I will argue that the claim that there are cases of contingent grounding conflicts with the principle that all grounding facts are *grounded* in the grounds they invoke. It has been proposed that if a collection of facts grounds another fact, then it *also* grounds the fact that it does so. This principle affords an elegant and uniform solution to the problem that all grounding facts invoke non-fundamental facts and therefore need grounds themselves to let the fundamental be devoid of anything non-fundamental.

My argument is based on a principle concerning the *explanatoriness* of grounding. If a grounding-fact is contingent in the described sense, then it is possible to wonder what makes our world a world in which the grounding-connection between the facts holds. The question “How do the grounds *in our world* manage to bring about the grounded?” then calls for an informative explanation. However, if grounding facts are grounded in the grounds they invoke, then citing the grounds of the grounding fact falls short of being informative for anyone who is seeking for such an explanation. I’ll argue that this is an untenable result given the explanatory ambitions that motivate the very concept of grounding. The main part of my talk will be concerned with establishing this line of argument.

Furthermore, I will show that my argument is based on a weaker and more plausible principle than related principles that have been put forward to reject contingentism. Especially, it doesn’t require the grounds to provide an exhaustive answer to every possible instance of the aforementioned question, which would rule out too many plausible grounding claims. The

principle I defend is compatible with the arguments of contingentists that we should allow individual relations of grounding to work against a certain background the world provides. However, it requires that this background should become explicit at some point in the grounding chain.

Dennis Wildfeuer

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Natural normativity and normativity in nature

In her neo-aristotelian account of what 'morally good' means, Philippa Foot develops the thesis of »Patterns of Natural Normativity« (Pattern-Thesis). Thereby, she means that there is a pattern found in the evaluation of living beings in which the grammar of 'good' stays the same. We can distinguish three subtheses here: (i) 'Good' is always used as an attributive adjective, i.e. in »The sheep is good.«, 'good' is not intelligible without knowing what 'sheep' means. (ii) We can formulate natural-historical judgments about different life-forms that express generic judgments about life-forms. Foot adds to this idea that we can also formulate natural-teleological judgments, which are also generic but refer to properties that are important in the life-circle of instances of the life-forms. The normative standards of the life-forms are expressed in those judgments and at the same time these properties are intrinsic to the life-forms. Therefore, these judgments express a standard of natural normativity – how an instance of a life-form naturally ought to be. (iii) While the criteria of what it means to be a good instance of a life-form differ in respect to the life-form, Foot argues that the structure of the evaluation stays the same – without regard to what kind of living being is evaluated (the Pattern-Thesis). In evaluating human beings, we are evaluating the will of a person: To be a good person is to be the way a human being ought to be qua being a human being.

In my talk I want to question subthesis (ii) while keeping the Pattern-Thesis. My doubts about (ii) stem from the source of natural-teleological judgments. If there is normativity in nature that can be expressed in judgments the way Foot suggests it, it remains a mystery how this normativity can be of any importance. If there is a sheep without its natural-teleologically important properties, it does not care about it. Normativity only makes sense for beings that are capable of reasons (i.e., for humans). In other words: A sheep that does not eat cannot reflect upon its defect.

I want to argue that we can keep the Pattern-Thesis and the talk about being a good instance of ones life-form by dismissing the idea of normativity found in nature itself. Instead, I want to combine Foot's thesis with Hannah Ginsborg's notion of »Primitive Normativity«. She argues that statements about biological functions like »Hearts ought to pump blood.« should be understood in a transcendental way: To have the concept 'heart' at all, we need the normative understanding of its function to pump blood. This normative understanding is primitive to grasping the concept. Now, my argument is that the same kind of primitive normativity is at work with natural-teleological evaluations of living beings. We cannot understand the lifeform 'sheep' without having its constituting properties in mind. These properties are primitive normative to the life-form. If my argument is sound, we do not have to touch subtheses (i) and (iii) and can keep the Pattern-Thesis without having a strange conception of normativity found in nature without there being someone grasping it.

Florian L. Wüstholtz

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***De se* beliefs: troubles with self-ascription**

Some of our beliefs are about ourselves in a seemingly irreducible *de se* way. However, there is a problem of *de se* beliefs which has been systematically illustrated by Perry (1979): How can we draw the distinction between Alpha believing *I am making a mess* and her believing *Alpha is making a mess* within the Frege–Russell framework of propositional attitudes? It seems that *de se* beliefs are notoriously underspecified if their objects are determined truth-conditionally. Lewis (1979) argues for a solution which unifies the objects of all beliefs. All beliefs are *de se* beliefs with properties, and not propositions, as their object. When a subject entertains a *de se* belief, she self-ascribes a specific property. This in turn ensures that the subject takes herself to have the property in question. Moreover, Lewis argues that *all* beliefs are *de se* in nature. Whenever a subject entertains a belief, she locates herself within the space of logical possibilities using a set of possible individuals (instead of a set of possible worlds) to ‘carve’ up logical space.

In this paper I will argue for a positive and a negative claim. The positive claim is that Lewis’ solution of the problem gives us a fruitful tool to accommodate important epistemic features of *de se* beliefs, such as their purported immunity to error through misidentification, or their aptitude to account for self-knowledge. The negative claim is that Lewis’ solution is question-begging, insufficient, and epistemically problematic. First, Lewis’ generalisation of *de se* beliefs presupposes what needs explaining: What is it for Alpha to have a belief about herself? The fact that all our beliefs are implicitly beliefs about ourselves does not explain how the more specific *de se* beliefs differ from *de re* beliefs. Secondly, the explanatory work rests solely on the shoulders of the notoriously unexplored and largely ignored notion of self-ascription. Self-ascription seems to be involved both in *believing to be standing* and in *believing to have the property of standing*. Hence, the latter cannot serve as an explanation of the former. Thirdly, the solution is incompatible with the widespread idea that *de se* beliefs are generally identification-free. If *de se* beliefs are understood as ascription of properties under the acquaintance relation of identity (Lewis 1979: 543; Chisholm 1981: 28), then they involve an unwanted identification element.

PANEL IN PHILOSOPHY OF SCIENCE:

Slobodan Perović

(University of Belgrade)

The logic of scientific discovery and experimentation in high energy physics

Several physicists, including Steven Weinberg, have recently suggested that the inescapable logic of discovery forces us to build mega-experiments at high energies (e.g. Large Hadron Collider at CERN) if we wish to tackle the fundamental levels of the physical world (e.g. recently discovered Higgs boson). Yet the nature of theoretical and physical constraints in high energy physics, and technological obstacles stemming from them, turn out to be surprisingly open-ended. Thus, an appeal to the logic of scientific discovery in this case is in danger of being circular and self-serving. I discuss various reasons behind the decisions to build the mega-labs, as well as the possibilities and limits of desirable epistemic and technological diversification of experimentation in High Energy Physics.

Vlasta Sikimić

(Joint work with Slobodan Perović, Sandro Radovanović and Andrea Berber)

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Measuring efficiency of knowledge acquisition in a laboratory: the case of Fermilab

A shift in applied epistemology from a single-agent knowledge to examination of group knowledge acquisition aroused the interest in research of multi-agent dynamics. The scope of knowledge distributed within a group ('virtual knowledge') is always wider than that of individual knowledge although the agents typically may not be aware of this. In the pioneering attempt of exploring this phenomenon, K. Zollman and others used the hypotheses-driven computer simulations to demonstrate that cognitive diversity of individuals increases virtual knowledge. First of all, we point out the virtues and the limits of such simulations. Secondly, we present a novel approach of employing data envelopment analysis (DEA) in order to analyse experimentation efficiency of a series of experiments in the high energy physics laboratory, namely Fermilab. We also draw a normative conclusion from such an analysis as the data-driven approach can predict the way of maximising group knowledge in the laboratory.