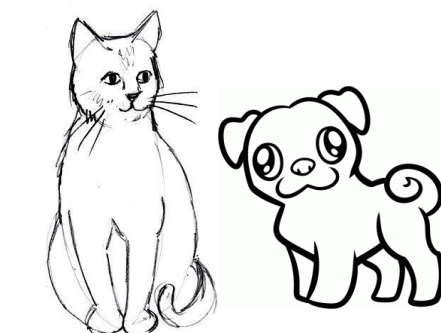




ISSUES ON THE (IM)POSSIBLE VII



Book of Abstracts

BRATISLAVA
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MODAL METAPHYSICS: Issues on the (Im)Possible VII is a conference organised by the Institute of Philosophy of Slovak Academy of Sciences, Slovak Philosophical Association, the Department of Logic and the Methodology of Sciences and metaphysics.sk research group.

The idea behind the conference is to put together researchers working on the problems of modality and provide thus an actual overview of the field. It is our pleasure to host contributors from all around the world and create thus an excellent, philosophically appealing and professional environment in Central Europe.

Of course, the conference would be impossible without the support of the Institute of Philosophy of Slovak Academy of Sciences. Namely, our gratitude belongs to the director of the Institute of Philosophy for generous support. We also thank to all who directly or indirectly contributed to the conference, academic and program committee, administrative staff of Slovak Academy of Sciences and last but not least to all speakers. Without them the conference would not be (im)possible.

Martin Vacek

KEYNOTE SPEAKERS

Jan Broersen

University of Utrecht

*The Quest for an Interventionist Version of Stit Logic for Modeling
Backward Looking Responsibility*

I will formally analyse the problem of backward looking responsibility for outcomes in a non-deterministic setting with multiple agents making choices at different moments in the past. I propose to distinguish three core modes of (causal) responsibility: (1) being the agent who initialised a course of events that led to the outcome, (2) being an agent that had the opportunity to intervene in a course of events that led to the outcome, but refrained from doing so, and (3) being the agent that enabled that another agent came in the position to initialise a course of events that led to the outcome (sense (1)). This analysis is directly applicable to modern questions about how to assign responsibilities in scenarios involving, for instance, self-driving cars and autonomous weapons. At this point, the formalisation is not yet fully completed, and I will discuss the difficulties I have with making these ideas precise.

Gregory Currie

University of York

Aesthetic Properties are Non-Aesthetic Properties

Ideas about dependence relations in aesthetics owe much to the work of Frank Sibley. Sibley famously argued that aesthetic properties are not "condition dependent": there are no non-aesthetic conditions the holding of which guarantee the holding of some aesthetic condition. But while Sibley did not use the term, much else he said seems to commit him to the view that aesthetic properties supervene on non-aesthetic properties. Drawing on ideas of Frank Jackson I will argue that this supervenient relation is best explained by supposing that aesthetic properties actually are just complexes of non-aesthetic

properties. Sibley's distinction between aesthetic and non-aesthetic properties collapses.

Peter Lamarque
University of York

Impossible Pictures and the Limits of Imagination

The paper identifies two broad kinds of impossible pictures, labelled “combinatorial” and “formal”. Combinatorial impossibilities arise from the pictorial combination of otherwise recognisable elements into images of objects that do not or could not exist in the physical world but which are nevertheless imaginable. The formal impossibilities are of a logical or metaphysical kind that, so it is argued, arise out of illusions and paradoxes in the pictorial process itself, notably the representation of 3-dimensional objects in a 2-dimensional plain. Examples like the Penrose triangle (“tribar”) and the Penrose stairs are discussed and the question raised whether such impossible objects can be imagined. A case study of three of M C Escher’s famous lithographs (that use the Penrose figures) is introduced aiming to show how artistic and aesthetic effects employed by Escher can aid the imagination in its struggle to make sense of the impossible.

Peter van Inwagen
University of Notre Dame

What Are Possible Worlds and What Are They For?

In the first part of this paper, I present a modal ontology. (It is an “actualist” ontology in the accepted but misleading sense of the word: it proceeds on the assumption that there are no things but those that actually exist. It is an “abstractionist” modal ontology, as opposed to a “concretist” modal ontology like David Lewis’s “Genuine Modal Realism.”) The objects that figure most prominently in this ontology are “ways things might be.” Among ways things might be there are maximal ways things might be—or “possible worlds.” The most important items belonging to the

ideology of the theory are ‘is true in’ (said of propositions and possible worlds) and ‘exists in’ (said of objects of any sort and possible worlds). I will maintain that ordinary speech employs two “modal idioms,” two ways of expressing modal theses, one illustrated by the sentence ‘It is possible that she will win the election’ and the other by ‘There are several ways in which she might win the election.’ I will further maintain that the modal ontology I present is a refinement of the ontology presupposed by the latter “idiom,” and that, therefore, in a certain sense, the modal ontology I present is presupposed by our everyday modal discourse. Modal arguments—in which philosophy abounds—may be framed either in terms of modal logic (the logic of ‘it is possible that’ and ‘it is necessary that’) or in terms of quantifier logic, possible worlds, and ‘true in’ and ‘exists in’. In the second part of the paper, I will defend the position that significant advantages are gained by framing them in the latter way.

Scott Shalkowski
University of Leeds

Can We Even Tell When the Wheels Come Off the Bus?

By examining the justification for the major metaphysical claims that David Lewis provides in *On the Plurality of Worlds*, I argue that the standards that Lewis and other metaphysicians often cite as good-making features of theories provide no basis for thinking that those theories are accurate. Conforming to those standards cannot supply much metaphysical knowledge. Worse, for metaphysicians, those methods are the basis for a *reductio* of the metaphysical enterprise.

CONTRIBUTED PAPERS

Riccardo Baratella

Universität Salzburg

baratellariccardo@gmail.com

No Chance for the Change Argument – A Reply to Stout’s “The Category of Occurrent Continuants”

Processes are occurrents that were, are, or will be happening. Moreover, either they endure (i.e., that continue) or they perdure. Stout (2016) contends that they endure. His argument – the Change Argument, hereafter – is grounded in the claims that processes may change and that something may change if and only if it endures. I shall argue that the Change Argument does not succeed. In particular, I shall show that the claim that processes may change does not follow from the premises of the Change Argument. Hence, Stout is not able to establish that processes endure.

Michael Bertrand

Auburn University

mdb0068@auburn.edu

Two Concepts of Metaphysical Grounding

It is widely assumed that there is a single grounding relation and that grounding is analogous to causation. However, I argue that grounding double prevention cases reveal an intractable tension between these and other plausible claims about grounding. I claim that this tension is best resolved by adopting grounding pluralism: the view on which there are at least two distinct relations of metaphysical ground.

Ethan Brauer
Ohio State University
brauer.28@osu.edu

Metaphysical Nihilism and Modal Logic

In this paper I argue, that if it is metaphysically possible for it to have been the case that nothing existed, then it follows that the right modal logic cannot extend D, ruling out popular modal logics S4 and S5. I provisionally defend the claim that it is possible for nothing to have existed. I then consider the various ways of resisting the conclusion that the right modal logic is weaker than D. Perhaps the two strongest objections to this conclusion are that some objects such as numbers or states of affairs exist necessarily, so it is not possible for there to have been nothing, and that the argument assumes an objectual interpretation of quantifiers over possible worlds and is invalid on a substitutional reading. I do not pretend to settle the questions of whether it is genuinely possible for there to have been nothing or of whether to interpret quantification over possible objectually or substitutionally. But we are left with the methodological conclusion that the choice of modal logic is entangled with metaphysical questions about quantification, the possibility of nihilism, and the necessary existence of abstracta.

Michael De
University of Bern
mikejde@gmail.com

Truthmakers or Truthmaking Supervenience?

I argue that counterpart theory is incompatible with truthmaking supervenience, the thesis that truth supervenes on being. I further argue that David Lewis's "qua" strategy for providing truthmakers for predications faces significant difficulties. I propose some solutions to those difficulties but retain my reservations about whether our truthmaking intuitions can be satisfied in the context of counterpart theory.

Anthony Fisher
University of Manchester
arjfisher@manchester.ac.uk

David Lewis and the Role of Theoretical Virtues in Metaphysics

David Lewis and the role of theoretical virtues in meDavid Lewis argued for (genuine) modal realism on the grounds that it is theoretically virtuous. This argument has been heavily criticised in the literature. One objection is that this argument falsely assumes that theoretical virtues provide reasons to believe a certain theory is true. Phillip Bricker stated this objection in ‘Realism without Parochialism’ (unpublished, 1992; see also Bricker 2008). Lewis responded to Bricker’s objection in a letter dated 6 April 1992, thus revealing what he would say in response to a common criticism of his use of theoretical virtues in metaphysics. In this paper, I present their debate, extract the argument for Lewis’s claim that theoretical virtues are criteria of reasonable belief, and explain to what extent it is plausible.

Dirk Franken
(University of Mainz)
difranke@uni-mainz.de

On Confusions of Ground and Existence

The debates I will consider are the debate about the nature of general modality, the debate about the nature of de re modality and, finally, the debate about the nature of persistence.

Giacomo Giannini
Durham University
giacomo.giannini@dur.ac.uk

A Crowded World. Dispositionalism and Necessitism

One of the main features of both Essentialism and Dispositionalism is that both aim to be what Contessa (2008) has dubbed ‘Hardcore Actualist’ theories, that is, reject the idea that possible worlds (however conceived) should play a role in making modal statements true – in short, in rejecting the idea that the Leibniz biconditionals are metaphysically informative. One of the purported advantages that ‘New Actualist’ such as Dispositionalism theories claim is that we need not be committed to strange and controversial entities such as possible worlds, since they play no role in fixing the modal truths. This is often taken to be a gain both in ontological parsimony and ‘common sense’ – Dispositionalism offers the prospect of making sense of modality with a lightweight, safe and sane ontology: all we need are powerful actual objects! (Vetter 2011) In this paper I will argue that these are both false hopes: Dispositionalism is far from both being ontologically parsimonious and being safe and sane. I will first argue that Dispositionalism is committed to the existence of every possible entity. Albeit the dispositionalist avoids the commitment to things such as ‘possible worlds’, she is committed to all of their population nonetheless – so, she is in no better position than the Possibilist or the ‘Softcore Actualist’. I will then argue that Dispositionalism, at least in Vetter’s version, plausibly supports a modal logic as strong as S5. Coupling these two results we obtain the (perhaps) surprising result that Dispositionalist is committed to a form 7 of Necessitism, the view that everything necessarily. The thesis of this paper, in short, is that Dispositionalism is committed to the following argument:

- 1) ‘x possibly exists’ is true
- 2) If ‘possibly x exists’ is true, then ‘x exists’ is true
- 3) For every sentence p, if ‘possibly p’ is true, then ‘necessarily, possibly p’ is true
- 4) ‘x exists’ is true iff x exists

5) Necessarily, x exists

Martin Glazier

University of Hamburg

`martin.hemenway.glazier@uni-hamburg.de`

The Puzzle of Possible Peace

Visualize world peace. Imagine that tomorrow all the warring nations of the world lay down their arms. Then every country now at war would be at peace. It therefore seems possible for it to be the case that every country now at war is at peace. But now consider any true statement whatsoever. This statement, no matter what it is, will also be true now. And this does not seem to be an accident. It is no accident, that is, that whatever is true is true now. On the contrary, this generalization has a kind of necessity. These considerations give rise to the puzzle of possible peace. The puzzle may be put in the form of an argument as follows.

- (1) Possibly, every country now at war is at peace.
- (2) Necessarily, for all δ , if δ then now δ .
- (3) Possibly, now every country now at war is at peace.

But no country can be simultaneously at war and at peace! The conclusion (3) of the puzzle appears to follow from the premises (1) and (2) by elementary modal reasoning. The first premise states that the following is possible: every country now at war is at peace. And, instantiating the quantifier in the second premise, we have that from ‘every country now at war is at peace’ it necessarily follows that now every country now at war is at peace. But given the modal axiom K, what necessarily follows from what is possible is itself possible ($((\Diamond(A \text{ and } \Box(A \text{ implies } B))) \text{ implies } \Diamond B)$). We therefore obtain the conclusion. One might protest that this conclusion does not entail the absurdity that some country could be simultaneously at war and at peace, since the generalization ‘every country now at war is at peace’ might be vacuously true. But the first premise remains plausible if we understand this generalization so as to require that it is nonvacuously true if true at all, and so absurdity does indeed

threaten. We will understand the generalization in this threatening way from now on. In this paper I will argue that the apparently innocuous inference from (1) and (2) to (3) is in fact invalid. There is a distinction, which has gone largely unrecognized, between two forms or senses of metaphysical modality. In one sense, it must be the very time it is now, while in the other sense, it is possible for it to be some past or future time. One of the premises of the puzzle involves one of these senses; the other involves the other. The inference from the premises to the conclusion therefore commits an equivocation. It is only by recognizing this modal distinction, I will argue, that the puzzle can be resolved. The puzzle is stated in tensed terms and becomes visible only when one takes seriously the idea that tensed statements can be properly speaking necessary or possible. Its neglect is perhaps due in part to the tendency of philosophers to frame modal questions in tenseless terms. No doubt there are philosophically important questions that are entirely tenseless: is it possible for God to exist if evil does too? is it possible for two physically identical creatures to differ mentally? But we are beings who see the world from a particular temporal perspective and many of the modal questions that are of the greatest importance to us are most naturally framed in tensed terms. We cannot fully understand, let alone answer, these questions until we have a satisfactory resolution of the puzzle.

Karol Lenart

Jagiellonian University

karol.lenart@doctoral.uj.edu.pl

Actualism and Haecceitism

Actualism amounts to an idea that everything that exist is actual. The typical challenge for this view is to give a proper account of possibility of alien individuals and to answer a problem of iterated modalities. In this paper I propose an haecceitic interpretation of actualism that provides a clarification and development of the idea that everything that exist is actual as well as resources to address issues concerning existence of alien individuals and truth conditions for iterated modalities.

Vladimir Lobovikov
Ural Federal University
vlobovikov@mail.ru

*Analytical Metaphysics of Modalities, and a Formal Epistemology
Axiomatic System Based on Not-Normal Modal Logic (Applying the
Formal Axiomatic Epistemology Theory to Studying Iterated
Deontic Modalities)*

The purely-logic basis of the formal axiomatic-epistemology system under application to investigating iterated deontic modalities is reduced to one and the only logic-inference-rule called “modus ponens”: the set of purely-logic axioms is empty. The set of axioms of the formal axiomatic-epistemology theory is reduced to own-axioms of that theory exclusively. The own-axioms are defined by five axiom- schemes. The epistemic modalities “knowledge”, “a-priori-knowledge”, and “empirical-knowledge” are defined precisely although not directly by the axiomatic theory under application. The nested deontic modalities “obligatory” and “permitted” are studied for discovering formal rules regulating the nest-construction-and-reconstruction under the exotic condition of a-priori-ness of knowledge. The well- known classical theorems about logical relations among the deontic modalities and their nests, are also provable in the applied axiomatic epistemology system under the condition of knowledge a-priori-ness. However, in this article, within the axiomatic system also several new interesting (hitherto not considered) theorem-schemes are proved under the indicated special (exotic) epistemic condition.

Yael Rebecca Loewenstein
University of Houston/University of Cambridge
Yael.loewenstein@gmail.com

*Against the Standard Solution to the Grandfather Paradox (and
How Not to Understand Time-Indexed Modals in Contexts with
Backwards Causation)*

1,000 time travelers travel back in time, each with the intention of killing his or her own infant self. Do they succeed? We start with the assumption that there is no branching time. If the possibility of backwards time travel is not to lead to logical contradiction, every time traveler must fail. Although a logically consistent story can be told in which each time traveler fails, it is seemingly inexplicable that something will go wrong for each one. For a time, this inexplicability objection was thought to provide powerful evidence that there is something incoherent about the possibility of backwards time travel in a universe without branching time. Following Lewis (1976), Sider (2002) and Ismael (2003), however, there is now near-consensus in the literature that the objection has no bite: there is nothing inexplicable about something going wrong in each case. Here I argue that the Lewis-Sider-Ismael reply rests on an error: it relies on an understanding of the temporally indexed modal ‘can-at-t’ which is inappropriate in a context with backwards causation. I conclude by showing that when the analysis of the modal is revised as it should be, the inexplicability resurfaces.

Kirk Lougheed
(McMaster University)
lougheed@mcmaster.ca

Epistemically Possible Worlds and the Counterpossible Objection to the Axiology of Theism

A recent question in the analytic philosophy of religion asks what value impact, if any, does (or would) God’s existence have on the world. For the necessitarian theist, any conditional which has God’s non-existence as the antecedent is a counterpossible. There are no possible worlds where God doesn’t exist. The necessitarian theist can’t compare the value of a theistic world to an atheistic world since atheistic worlds are impossible. Thus, the theist cannot answer the value question about God. The question cannot even get off the ground. The converse, of course, is true for the necessitarian atheist. This is the counterpossible problem for the value question about God’s existence (and non-existence). I examine five possible ways of addressing this worry: (i) accepting quietism about the question;

(ii) assigning a value to a metaphysical impossibility; (iii) rejecting a Lewis/Stalnaker interpretation of counterpossibles; (iv) denying God's necessity and; (v) Joshua Mugg's Cognitive Decoupling solution. I argue that for many the cost (i) through (iv) is too high. I conclude by proposing a solution that does not rely on accepting (i) through (iv) and is simpler than (v). The most promising way of understanding the axiological question is that it is asking us to compare epistemically possible worlds rather than metaphysically possible worlds. The comparison between an epistemically possible world where God does not exist and an epistemically possible world where God does exist is one that both the necessitarian theist and necessitarian atheist can sensibly make, respectively.

Benjamin Marschall
University of Cambridge
bm515@cam.ac.uk

Carnap's Internal Platonism

In his *Empiricism, Semantics, and Ontology*, Rudolf Carnap famously argued that we can do anything a mathematical Platonist wants - quantify over numbers, hold them to be mind-independent, claim that numerals refer to them - without committing ourselves to any mysterious Platonistic metaphysics. Carnap defends this internal Platonism by construing mathematical statements to be both internal to a linguistic framework and analytic. I will develop an argument first suggested by Beth (1963) according to which the existence of non-standard models of arithmetic undermines Carnap's method of drawing the analytic/synthetic-distinction, and will furthermore argue that this is a much bigger problem for the account than Carnap himself seems to have realised.

Dan Marshall
Lingnan University
danmarshall@ln.edu.hk

Against Linguistic Ersatzism

The argument against linguistic ersatzism is the following:

P1) If linguistic ersatzism is true then the (ersatz) Leibnizian analysis (or a close relative) is true

P2) If linguistic ersatzism is true then it is not the case that the (ersatz) Leibnizian analysis (or a close relative) is true

C) Linguistic ersatzism is false

Jan Heylen & Felipe Morales

KU Leuven & KU Leuven

jan.heylen@kuleuven.be

felipeandres.moralescarbonell@kuleuven.be

Circularity and Modality

A known issue with Williamson's (2007) account of knowledge of metaphysical modality is that it might fall into a vicious form of circularity. Williamson himself preempts a form of the objection, but dismisses it. Tahko (2012) and Roca-Royes (2011) suggest that the problem might be deeper than Williamson acknowledges. Here, we will argue that changing the epistemological basis for modal knowledge (like, for example, Tahko proposes) does not solve the problem; indeed, the circularity challenge is recalcitrant.

Peter Marton

Bridgewater State University

pmarton@bridgew.edu

Without Conceivability. (A Moderate Anti-Realist Approach to Possibility, Meaning ... and Zombies)

Semantic Anti-Realism is built on the twin principles that neither truth nor meaning can outstrip knowability. This paper introduces a Moderate Anti-Realist (MAR) approach that incorporates these principles by the use of (i) a truth operator that differentiates between truths and facts; and (ii) a modified approach to propositional meaning according to which the content/meaning of

propositions is identified not with the possible worlds in which they are true/factual, but rather in which they are known. I will argue that our MAR concept of propositional meaning is a better tool for establishing the relevant (metaphysical or logical) possibility of such hypothetical scenarios as, e.g., the existence of philosophical zombies than the rather quixotic concept of conceivability. Using some particular examples, I will conclude that this approach can avoid the abyss of extreme modal skepticism, but it also reveals the limits of establishing possibility and its use in the so-called conceivability arguments.

Gonzalo Rodriguez-Pereyra

Oxford University

gonzalo.rp21@gmail.com

Are the Laws of Metaphysics Metaphysically Necessary?

Take the laws of metaphysics to be synthetic claims about the basic content and/or structure of the world. The following, if true, would be examples of laws of metaphysics: "There are sets", "The Pair Set Axiom is true", "There are no sets", "Resemblance is primitive", "Resemblance holds when two things share a universal". Are such claims and the like metaphysically necessary? Gideon Rosen has distinguished two conceptions of necessity. According to the Standard conception, the laws of metaphysics are necessary. According to the Non-Standard conception, the laws of metaphysics need not be metaphysically necessary. This is because, according to the Non-Standard conception, what is metaphysically necessary is what is required by the nature of things, and natures are Kantian, in the sense that such natures do not require the existence of the things that instantiate them. Thus, since, for instance, the nature of sets does not require that they exist, that there are sets, or that the Pair Set Axiom is true, are not metaphysically necessary claims. In my paper I shall give reasons to think that the Non-Standard conception is incoherent, in the sense that if it is true, it is not true. Thus, if the laws of metaphysics are not metaphysically necessary, this is not because the Non-Standard conception is the right account of metaphysical necessity.

Zach Thornton
University of North Carolina at Chapel Hill
zathorn@live.unc.edu

Distinctness as Possible Difference

It seems possible that there is a world that contains indiscernibles – entities that are distinct but qualitative duplicates. But if indiscernibles are possible, then the standard account of distinctness, which states that there are no entities that are qualitative duplicates, is incorrect. In this paper, I will give a new argument for the possibility of indiscernibles based on the standard metaphysical interpretation of counterfactuals. I will then give an account of distinctness that I call Distinctness as Possible Difference, which distinguishes entities by both actual, and merely possible differences. Finally, I argue that Distinctness as possible difference should be preferred over the standard account because it can explain how indiscernibles are distinct despite being qualitative duplicates using merely possible difference.

Alessandro Torza
National Autonomous University of Mexico (UNAM)
atorza@me.com

The theory of grounding has come to be the framework of choice for modeling metaphysical explanation and dependence (Clark & Liggins [1], Correia & Schnieder [2], Trogdon [42]). It is routine to characterize grounding by way of postulates constraining its logic. The aim of the present paper is twofold: firstly, it will be shown that a subset of those postulates is incompatible with a minimal characterization of metaphysical modality; then, I will consider and ultimately reject a number of strategies aimed at reconciling ground and modality.

Rheanna Trevino
University of Texas at San Antonio
rheanna.trevino@gmail.com

Where metaphysics and analytic philosophy merge, non-existing intentional objects and negative existentials create clear problems in both disciplines. In quotidian conversation it is not uncommon to discuss non-existing intentional objects, fictional characters, and generally things that do not exist in the actual world: we talk about mythological creatures, fictional characters, or various other non-existing intentional things (Santa Clause, Mother Nature, etc.). While it is not the case that all intentional objects, anything we talk (or think) about, are unreal or non-existing, non-existent intentional objects seem to exist simply because we talk about them. The question is, do they actually exist? And if not, can we say true and/or meaningful things about them?

Martin Vacek
(Slovak Academy of Sciences)

Dispensing with Parsimony

Metaphysical parsimony is traditionally considered as a theoretical virtue. In my talk, I doubt the claim and argue that given we differentiate between qualitative and quantitative ontology and ideology, neither entities nor kinds of entities play an important role in theory choice and comparison. Since such result has some surprising consequences I respond to three objections against the view.

Michael Wallner & Anand Jayprakash Vaidya
University of Graz & San Jose State University
michaelwallner1@gmail.com
anand.vaidya@sjsu.edu

The Structure of Essentialist Explanations of Necessity

In this paper we investigate the structure of essentialist explanations of necessity by criticizing Bob Hale's argument for the existence of basic necessities, i.e. necessities that cannot be explained by anything further. Following Fine, Lowe, Hale and others, modal truths are to be explained in terms of essentialist truths: Necessarily p iff, and because, there is some x whose essence ensures that p . Hale believes that this explanatory strategy is not universally applicable. He argues that the necessity of essentialist truths cannot itself be explained by once again appealing to essentialist truths, for this would either be viciously circular, or viciously regressive, or it would undermine the initial essentialist truth. We show that his argument rests on a misunderstanding of the structure of essentialist explanations of necessity, independently of what one takes essences to be. We clarify that misunderstanding and conclude that Hale's argument for basic necessities is inconclusive.

Augusto Trujillo Werner

(University of Malaga)

augustotrujillowerner@gmail.com

Metaethics: Aquinas, Hume and Moore

This article concerns Aquinas' practical doctrine on two philosophical difficulties underlying much contemporary ethical debate. One is Hume's Is-ought thesis and the other is its radical consequence, Moore's Open-question argument. These ethical paradoxes appear to have their roots in epistemological scepticism and in a deficient anthropology. Possible response to them can be found in that Aquinas' human intellect (essentially theoretical and practical at the same time) naturally performs three main operations: 1°) To apprehend the intellecta and universal notions *ens*, *verum* and *bonum*. 2°) To formulate the first theoretical and practical principles. 3°) To order that the intellectum and universal good be done and the opposite avoided. Thomistic philosophical response to both predicaments will not be exclusively ethical, but will harmonically embrace ontology, anthropology and epistemology.

Nathan Wildman
Tilburg University/TiLPs
N.W.Wildman@uvt.nl

Necessity by Accident

General consensus has it that contingencies lack the requisite modal umph to serve as explanations for the modal status of necessities. The central aim of this paper is to show that this received opinion is incorrect: contingent necessity-makers are in fact possible. To do so, I identify certain conditions the satisfaction of which entail the possibility of contingent necessity-makers. I then argue that necessary contingent possibilities (i.e., necessities of the form ‘ $\Box\Diamond$ (P)’), where the embedded fact is itself not necessary) satisfy these conditions. Consequently, these necessities in fact have contingent necessity-makers.

Krzysztof Wójtowicz
University of Warsaw
wojtow@uw.edu.pl

The Modal Character of Program Explanations

In the paper the problem of the modal character of mathematical explanations in science is discussed. The focus is on the programming account, according to which mathematical theorems impose modal constraints on the physical world (informally speaking – they are “programming” the world, in particular when “no-go-theorems”, i.e. impossibility results are considered). This accounts leads to the problem of the metaphysical status of the background assumptions: of course, in order to prove different theorems, we need assumption, which vary in strength. So, the source of our knowledge of the modal constraints (provided by theorems) is a conceptual analysis of abstract mathematical principles. This seems to be fairly standard – but in some cases it leads to considerations exceeding standard mathematics.

Current Trends in Deontic Logics II: Modality, Hyperintensionality, Responsibility

Roberto Ciuni

Department FISPPA
roberto.ciuni@unipd.it

Information-based Oughts and their Interaction with Knowledge and Beliefs

Consider the following scenario: Ann has to go outside and has no way to check whether it's raining or it's sunny. If it's raining, she ought to take an umbrella; if it's sunny, she ought not to take an umbrella. Given how the weather was in the preceding days, she believes that it's raining outside. She concludes that she ought to take an umbrella. She takes an umbrella, walks out, and finds that it's sunny. In the above example, we would say that Ann is right in concluding that she (unconditionally) ought to take an umbrella, even though it is implied that the objective ought toward taking an umbrella holds conditionally on the day being rainy. The first (unconditional) ought is somehow based on Ann's beliefs and preferences, the second (conditional) ought is based just on Ann's preferences. In order to capture this scenario and reason about it, we need to introduce a notion on information-based ought beside the usual notion of an objective ought. In this paper, we present a conditional logic that enables us to reason about information-based oughts and the role they play in decision-theoretical scenarios that, like the above, crucially involve knowledge and beliefs.

Unconditional oughts and beliefs turn to be special cases of their conditional counterparts. The paper proceeds as follows. After providing a bit of background and setup, in the first part of the talk we introduce (unconditional and conditional) information-based oughts, together with standard (unconditional and conditional) objective oughts, beliefs, and knowledge. We interpret the resulting operators on a maximality-based semantics in the style of Baltag and Smets [1], van Benthem [4], van Benthem, Grossi, and Liu [5], Board [2], and Hansson [3]. In the second part of the paper, we

integrate the static maximality-based framework above with two possible dynamics of information release that have been discussed in the literature of Dynamic Epistemic Logic, namely public updates and public upgrades, and we show how they can induce a change in information-based oughts. In particular, we show how release of hard information (updates) and information-based oughts together can help capture some notion of regret. Finally, we present two complete axiom systems for the dynamic logic of updates and information-based oughts and the dynamic logic of upgrades and information-based oughts, respectively.

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Daniela Glavaničová&Matteo Pascucci

Slovak Academy of Sciences

dada.baudelaire@gmail.com

matteo.pascucci@tuwien.ac.at

The philosophical literature devoted to the notion of responsibility is so rich and deep that is almost intractable, while considerably less attention has been devoted to this notion in the logical literature. Each of these logical accounts focuses on certain aspects of responsibility, without aiming at an exhaustive picture, since responsibility attribution involves an impressive variety of levels of analysis.

To give an idea of this variety we can start by pointing out, as in Giordani (2018), that an individual may be held responsible either for an action or for some consequences of an action. Responsibility for an action usually does not entail responsibility for its consequences, given that an individual cannot foresee all consequences of what he/she does. However, an individual may deliberately act in such a way as to ensure that a given outcome obtains. In the latter case responsibility can be attributed with respect to both the action performed and the state-of-affairs achieved. If we restrict our attention to responsibility for consequences of actions, then, as observed in de Lima et al. (2010), an individual may be taken to be responsible either for some state-of-affairs that should obtain in the future or for some state-of-affairs that occurred in the past. Focusing on past-oriented responsibility, one can further distinguish, along the lines of Lorini et al. (2014), between causal and agentive responsibility, where the former encompasses also cases of accidental contribution to the attainment of a relevant state-of-affairs, while the latter makes explicit reference to voluntary contribution, or between active and passive responsibility. Active responsibility means that an agent did something to produce a certain outcome, while passive responsibility means that an agent refrained from doing something that could have prevented a certain outcome.

The present talk is devoted to a logical treatment of various notions of normative responsibility. We philosophically motivate and formally specify a framework of temporal deontic logic enriched with agent-relative operators for deliberate contribution to the attainment of a state-of-affairs as well as with an operator for identity of contents among formulas.

We take a novel perspective on the analysis of responsibility based on the role of *normative sources*. We introduce a logical framework where it is possible to make explicit reference to normative sources from which obligations, permissions and prohibitions arise and whose content may vary with time. We will see that this dynamism allows one to capture many aspects of the debate around responsibility that are directly relevant in the legal as well as in the moral domain and that have not been formally addressed so far.

The framework is hyperintensional in the sense that it does not allow, in general, for replacement of provably equivalent formulas in responsibility ascriptions; furthermore, it is endowed with a procedure to solve conflicts arising from the assessment of different normative sources. We illustrate how the notions of responsibility defined can be put at work in the analysis of real examples of legal reasoning.

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Meha Mishra

Indian Institute of Technology Kanpur
meha@iitk.ac.in

Tolerating Inconsistencies: A Study of Logic of Moral Conflicts

Moral conflicts are the situations that arise as a reaction to dealing with the conflicting obligations or duties. A systematic study in particular, the resolution of moral conflicts has been studied extensively in the area of moral reasoning (refer to Utilitairians, Bernard Williams, Rawls) and the corresponding reasoning with moral conflicts, in the area of Deontic logic. Moral conflicts are special kind of situations in which an agent ought to do each of a number of things but impossible to do them all once. On one hand, we observe that moral conflicts are very much part of our linguistic discourse but on the other hand, the core principles of standard deontic logic entail that it is not possible to have "moral conflicts". This poses a major challenge to come up with adequate logics of

normative propositions involving moral conflicts. Any system of logic that is supposed to apply to a wide range of normative discourse must somehow reconcile these two positions. We argue that situations involving moral conflicts are a kind of situations tolerating some inconsistencies. The best known logics in which we tolerate inconsistencies are that of paraconsistent logic. Hence, we require a plausible paraconsistent logic that deals effectively with these inconsistencies, just as we consider both situations to be true together. Different from classical logic and other logics, paraconsistent logics can be used to formalize inconsistent but non-trivial theories. In classical logic, from a true conflict, the system becomes trivial, whereas in the case of paraconsistent logics, the conflict does not necessarily lead to trivialities in the system. Indeed, in paraconsistent logics, a conflict can be represented, operated, isolated, and the inference rules remain valid. I examine three paraconsistent logics; Graham Priest's logic LP, the logic RM from the school of relevance logic and Da Costa's logics Cn based on the three valued approach, the relevance approach and the non-truth functional approach respectively. I illustrate my work with two classic examples from famous Indian epic 'Mahabharata' where the protagonist Arjuna faces moral conflict in the battlefield of Kurukshetra. In the process of piecemeal analysis of Arjuna's dilemma, both the cases are intuitively characterized and logically examined. The inquiry is to find an adequate set of principles to accommodate Arjuna's moral conflicts in paraconsistent logics. Meanwhile it is also interesting to relate Krishna's arguments for resolving Arjuna's conflict to paraconsistent approach of conflict tolerance.

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Tereza Novotná
Masaryk University
 tereza.novotn@gmail.com

Network Analysis in Law

Network analysis is a mathematical-statistical method based on graph theory providing tools to visualize a large number of different entities and relations among them. Using network analysis methods in legal domain is a rather novel way of analyzing legal sources. However, there has been an increasing interest over the past few years in these methods and legal scholars are adopting this approach

more and more often nowadays. The main reason is that network analysis is suitable for being applied to systems involving many entities (legal sources) and many relations among them (citations or similarities). The great part of every lawyer's job is searching through relevant judicial decisions, which means searching for relevant case law. With the growing number of judicial decisions, this task becomes challenging even for experts. However, legal and computer experts are trying to provide tools for processing a large number of legal texts and extracting relevant information even for users without any technical background. Network analysis is just one of the ways to handle such issue. The network usually contains two types of data: nodes (or vertices) and edges (or links). Nodes usually represent legal sources (such as individual codes, laws, articles or judicial decisions) and edges represent relations among them (such as citation references or similarities). In this presentation I apply network analysis methods to case law of Supreme, Supreme Administrative and Constitutional court to find what relations are among them. For this purpose I use whole texts and whole datasets of case law and process them. I apply different types of network analysis on the processed documents and I empirically evaluate whether the performance of legal research based on network analysis is better than manual research. If so, I design a tool based on previous results to help in case law research using the most suitable network analysis method. The Czech legal system is one of the continental legal systems based on codified legal documents and prescriptions. Judicial decisions are not as legally binding as codes, they are subjectively binding. But judicial decisions of Supreme, Supreme Administrative and Constitutional court are considered to be binding on the legally argumentative level. There is a necessity regarding basic principles of legal certainty, that the court decides in the same way given the same circumstances. For these reasons, case law of the three highest courts is an important legal source for lawyers, judges, students or even public. However, case law research is still quite inefficient given the information technology possibilities available today. It is a general aim of this work to provide an empirical evaluation of available network analysis methods and to make a necessary step toward automatic processing of case law and its application.

Igor Sedlar
Czech Academy of Sciences
sedlar@cs.cas.cz

Hyperintensional Deontic Logics

In a recent paper [1] I have outlined a general semantic framework for hyperintensional modal logics. The framework generalizes neighborhood semantics by formalizing modalities as expressing properties of contents whose nature is not specified in any way. (Neighborhood semantics is a special case where propositions, i.e. sets of possible worlds, are taken as contents). The advantage of this approach is that it is consistent with various different— and often competing—accounts of contents. Therefore, it allows to study hyperintensional modal logics formally without the need to commit to any particular theory of content. In this talk I will consider applications of the framework in deontic logic. Obligation and permission are formalized as properties of sentential contents, so the framework provides a complement to the standard modal formalization of deontic concepts as properties of propositions. I will show that this formalization easily avoids many well known deontic paradoxes.

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Philosophy of Language: Semantics of Fictional Discourse II

Marco Hausmann

Ludwig-Maximilians-Universität München

marco.Hausmann1@gmx.de

Fictional Realism and Negative Existentials: Why Kripke's Proposal Fails

Kripke (2013) famously argues that fictional characters, such as Sherlock Holmes, exist. He therefore has to explain how negative existential statements like 'Sherlock Holmes does not exist' could possibly be true. For, as Kripke explains, if one says 'Sherlock Holmes does not exist', "one isn't saying of a fictional character that it doesn't exist. On the contrary, the fictional character does exist." (2013: 148). Kripke suggests, therefore, that "this negative existential says that there is no such true proposition as that Sherlock Holmes exists, in fact, really no such proposition at all as that Sherlock Holmes exists" (2013: 159). That is, according to Kripke's suggestion (2013: 144–160), sentences like 'Sherlock Holmes does not exist' and sentences like 'There is no such true proposition as that Sherlock Holmes exists' express the same proposition. In other words, according to Kripke, the proposition that Sherlock Holmes does not exist is identical to the proposition that there is no such true proposition as that Sherlock Holmes exists. And, likewise, the proposition that Quine does not exist is identical to the proposition that there is no such true proposition as that Quine exists. In my talk, I try to show that Kripke's proposal has obviously false consequences. My argument runs, roughly, as follows: It is plausible to assume that, if the proposition that *p* trivially entails the proposition that *q*, then anyone who has (or had) good reasons to believe that *p* has (or had) also good reasons to believe that *q*. Take, for example, the proposition that there are no fat men in that doorway. This proposition trivially entails that there are no bald fat men in that doorway. It obviously follows that anyone who has (or had) good reasons to believe that there are no fat men in that

doorway has (or had) also good reasons to believe that there are no bald fat men in that doorway. But now consider the following argument: Quine had good (though probably not decisive) reasons to believe that there are no propositions. The proposition that there are no propositions trivially entails that there is no such true proposition as that Quine exists. Hence, Quine had good reasons to believe that there is no such true proposition as that Quine exists. However, according to Kripke's proposal, the proposition that there is no such true proposition as that Quine exists is identical to the proposition that Quine does not exist. It follows that Quine had good reasons to believe that Quine does not exist. And this is clearly false. Quine didn't have good reasons to believe that Quine does not exist. I conclude that Kripke's proposal has obviously false consequences. At the end of my talk, I present a weaker interpretation of Kripke's proposal and I explain why this weaker interpretation is equally bound to fail.

Elisa Paganini

Università degli Studi di Milano

elisa.paganini@unimi.it

Fictional Knowledge

It is usually taken for granted that a necessary condition for knowing P is the truth of P together with the belief in P. It may therefore be claimed that

(FK) if we gain a kind of knowledge through fiction (let us call it fictional knowledge) of P*, then P* is fictionally believed and P* should be true - in at least a certain sense.

My hypothesis is that this assumption grounds the different ways adopted by philosophers for attributing truth-conditions to fictional sentences. My claim in this work is that fictional sentences do not express propositions and do not have a truth-value. This claim may be challenged by observing that if it is accepted that fictional sentences do not have truth values together with (FK), by modus tollens we have to conclude that we do not have fictional knowledge.

But it is quite evident that we acquire a kind of knowledge through fiction and therefore the above conclusion is unacceptable. My aim in this paper is to show that (i) the objectivity of the fictional content can be accounted in dispositional terms and (ii) to explain how a dispositional account of fictional content can be a necessary condition for fictional knowledge.

1. Objective content I propose to characterize the objectivity of fictional content in dispositional terms, but my characterization of the role of dispositions is quite different from Walton (1990)'s appeal to them. According to Walton, given a fictional text and a certain context, there is an - at least implicit - disposition of its receivers to recognize what they are forced to imagine. This is an optimistic and unrealistic assumption. In order to acknowledge this fact, it may be useful to consider fictional texts with incoherent descriptions, or with reports of indeterminate identity or vague existence. With such kinds of texts, receivers may be unable to figure out what they are invited to imagine.

2 Instead of saying that given a fictional text and a certain context, there is a disposition to establish what is to be imagined, I propose that it is when there is a common disposition among people in a certain context to establish what is to be imagined according to a certain fictional text, that the fictional text has a content and the content is objective. The objectivity of the content – according to my proposal – is not to be interpreted as a rule of interpretation determined by the fictional text and the context, it is instead because the receivers have a common disposition to attribute a common content to a certain fictional text that the fictional text has a shared content and its objectivity does not depend on rules existing independently of the actual users but is, instead, determined by the disposition to imagine a certain content shared by both author and receivers.

2. Fictional Knowledge I propose to abandon (FK) but to adopt its spirit. (FK) assumes that a necessary condition for fictional knowledge is the objectivity of the content (in terms of truth) and a certain epistemic attitude towards it (belief). My claim is that a necessary condition for fictional knowledge is a different characterization of the objectivity of the content (in dispositional terms) and a different epistemic attitude towards this content (pretence). My proposal is therefore the following one: (FK*) If S

fictionally knows that P, then P is actually attributed a common content and is pretended by a group of people including S.

Manuel Rebuschi
Université de Lorraine
manuel.rebuschi@univ-lorraine.fr

IF Modal Logic for Fictions

The purpose of the talk is to propose a renewed analysis of the semantics of fiction and more particularly of fictional names, which is based on Lewis's (1978) account of truth in fiction and on Hintikka & Sandu's independence-friendly (IF) extension of standard logics.

The objective is to establish the semantics of fictional statements on an analysis of attitude ascriptions specifically related to the interpretation of these statements. The idea, presented in Lewis and deployed by Walton (1990), is that authors and performers of fictional narratives usually make it as if they believed in the truth of these stories. I propose here a semantic analysis which makes it possible to deal head-on with the fictional statements and with the attitude reports of their interpreters.

Sentences including empty singular terms express quasi-singular thoughts (Taylor 2010), which lie in some no man's land between general and singular thoughts. Using IF quantifiers, Rebuschi & Tulenheimo (2011) account for a new kind of attitude ascription A between de dicto ($A \exists x \phi$) and de re ($\exists x A \phi$), labelled de objecto: $A (\exists x_{/A}) \phi$. This device can be applied to individual constants so that their "rigid designation" be consistent with their (simulated) "flexibility" while occurring in the scope of specific modalities.

In the talk I will introduce the framework of IF first-order modal logic. Based on Kripke models for First-order modal logic, one can build a game-theoretical semantics (GTS) for formulas, and then introduce imperfect information in evaluation games. This gesture leads to IF modal logics. For the purpose of attitude and fiction analysis, we can restrict the IF extension to quantifiers made independent from modalities, like $\exists x_{/\Box}$. It will be shown how this

formal semantics solve traditional semantic puzzles about fictional and metafictional statements.

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Fredrik Stjernberg
Linköping university
fredrik.stjernberg@liu.se

The No-name Theory of Fictional Names

Fictional names will work in ways that are different from the ways in which names for ordinary objects work. The question is how different they are. Do they name a special kind of objects, fictional objects? Do they mock-refer? Is the use of fictional names an exercise in pretending? Variations of these views have been tried, from Meinong onwards. One potentially important difference, compared with ordinary names, is that the introducer of fictional names doesn't seem to try to refer to anything. The story-teller is not picking out one object, trying to get the reader to have that object in mind. If we think that this attempt to single out one thing is what sets names apart from other expressions, fictional names seem to be ill suited to be accepted as real names. Even if someone fully understands a story, there is an open issue concerning which fictional object that is being picked out (assuming that there even are such things as fictional objects). One contender is the no-name view, so-called by Predelli (2017). This view has some likeness with Frege's conception of fictional names as "mock-names" (Frege 1897; for opposition to such a reading of Frege, see Bell 1990). According to this view, fictional names may well be names in a grammatical sense, but not in any interesting semantical sense. Fictional names are no more names than fictional coins are "a peculiar type of change at my disposal" (Predelli, p. 126). Some ideas from Predelli (2017) will be used to account for the special character of fictional names. Predelli is perhaps the clearest and most consistent presentation of a no-name view, and his treatment is also commendably straightforward about outstanding problems. Predelli leaves these issues as problems to be dealt with on a later occasion. I will say something about some of the problems mentioned by Predelli, and concentrate on an issue concerning what role an account of the semantics of fictional names is supposed to play. The no-name theory entails that there is no semantics of fictional names, and that the contribution made by fictional statements is not to be

provided a semantic interpretation, or, rather, that providing some "trouble-free fictional semantics" won't help us address the problems about fictional names (Predelli, p. 128). So in at least some sense, there is no semantic problem for fictional names (oh, the irony of the title of the workshop!). But this leaves many issues undecided. A natural idea is that we appeal to semantics as a part of the explanation of successful communication and understanding, and if we for fiction are to be left without much of a semantics, we should perhaps look elsewhere for explanation of the nature of communication with fiction. Here there are several options, and in my talk I will outline them, giving the no-name theory a helping hand. The pre-semantic background, which Predelli develops in earlier chapters, will be central here.

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Truth in Time and Open Future II

Andrew Cortens

Boise State University
acorten@boisestate.edu

On the Metaphysical Necessity of the Past

I argue for two claims:

1. The sense of the term ‘necessary’ that people commonly apply to facts about the past is irreducible - it is not definable in terms of the abilities of agents, or in terms of causality, for example;
2. We should not be too quick to rule out the following radical suggestion: the kind of necessity that is widely thought to attach to things past is indistinguishable from what philosophers sometimes call “metaphysical” or “absolute” necessity – i.e., the type of necessity that is usually attributed to the fact that $2 + 2 = 4$, the fact that nothing is distinct from itself, the fact that all rats are rodents, and so on.

The radical suggestion comes in two forms, one more radical and one less so. The more radical version takes the necessity enjoyed by the proposition that $2+2=4$ to differ from that possessed by the proposition that Caesar was assassinated only in this respect: whereas the former has always been necessary, the latter only came to be necessary when Caesar was assassinated. The less radical version takes both propositions to enjoy the same form of necessity, but takes the proposition that $2+2=4$ to enjoy it in a tenseless fashion.

While both fatalist and indeterminacy-of-the-future versions of the view are possible, I assume the viability of an Ockhamist framework

that affirms the necessity only of all “hard” facts about the past, thus allowing for the future to be determinate and yet metaphysically contingent. The view thus provides a simple and intuitive account of what the openness of future consists in, which I take to be one of its major selling points. To quell doubts about the viability of the Ockhamist distinction between hard and soft facts about the past, I argue that such a distinction is presupposed by standard formulations of causal determination, and that indeterminacy accounts of the openness of the future require the distinction too.

Others have shown that historical notions of necessity and possibility do not obey the S5 principle that whatever is possible is necessarily possible. This may seem problematic for views that equate historical necessity with metaphysical necessity, since the latter is widely thought to obey the logic of S5. I argue that this is not a decisive strike against the view and show that less radical version of the view can soften the blow by affirming an tenseless version of the S5 principle.

The radical version of the view has some striking consequences, some of which will be regarded as reductions. The most significant of these are perhaps (a) that there could not possibly have been no time at all, and (b) that if the cosmos has always existed, then it is not possible that there should never have been a cosmos. While these consequences may be surprising, I argue that “philosophical intuitions” to the contrary carry little evidential weight in this area and that any grounds for rejecting (a) or (b) will have to come from a source other than a priori theorizing, such as mature physics, or revealed theology. Further, I suggest that even if we have grounds for rejecting (a) or (b) (which I concede might be the case), the less radical version of the view survives, since it lacks any such consequences.

Roberto Ciuni & Carlo Proietti

Department FISPPA & University of Amsterdam
roberto.ciuni@unipd.it
c.proietti@uva.nl

The problem of future contingents can be presented as follows: If the present state of the world is not sufficient to determine all subsequent facts (as indeterminists purport), how are we to attribute a truth-value to our statements about the future? Indeterminism on time is the view that “at a given moment [...] in the world there are a variety of ways in which affairs might carry on” (Belnap and Green 1994, p.365). The majority of indeterminist theories come with a branching-time representation of time: each moment is preceded by a linearly order sequence of earlier moments, but it may be followed by many incomparable later moments; also, maximal chains of moments (histories) represent complete possible developments of the present state of the world.

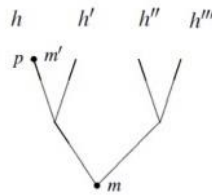


Figure 1: A branching-time model.

It is generally held that truth-attribution to future contingents poses a problem to indeterminism: if at each moment we have a number of alternative real possibilities open, then which among them is relevant to evaluate (*) Tomorrow there will be a sea-battle or its assertion? We have possible futures where, tomorrow, a sea-battle occurs, and possible continuations where no sea-battle occurs. It is not clear which one should decide for the truth of (*). Since indeterminism enjoys a great popularity today, the question is pressing. One possible reply, which is usually traced back to

Aristotle, is that future contingents are neither true nor false. This is called the Indeterminacy Intuition by MacFarlane (2003). In today's philosophical logic, this is the main tenet of Supervaluationism, a view that takes a statement about the future to be true (false) if and only if it is satisfied (dissatisfied) relative to every history passing through the moment of evaluation. According to MacFarlane (2003), any satisfactory approach to the future contingent problem should also save the Determinacy Intuition, or retrogradation of truth. To put it with (MacFarlane 2003, p. 321): “after all, once the sea battle has happened (or not), it seems quite strange to deny that the assertion [of our sentence (*)] was true (or false)”. More in general, the principle states that if it is true now that p , then it is true that in the past it would have been the case that p . MacFarlane (2003) holds that Supervaluationism would not constitute a good ground for a theory of the assertion of future contingents, since it could not keep together Indeterminacy and the Determinacy Intuition. In order to fix this problem, he formulates the nowadays famous Double Time Reference Theory (DTRT), also known as relativistic postsemantics. In this paper, we have two main goals. First, we show that, contrary to MacFarlane's claim, if given a reasonable expressive power, Supervaluationism can accommodate both the Indeterminacy and the Determinacy intuitions for assertions. Second, MacFarlane (2008) implies that Supervaluationism cannot define a suitable actuality operator in its semantics. Again, we show that the success of the criticism depends on the expressive power one wishes to admit. In particular, once the reference-fixing expressive power of hybrid logic is admitted, Supervaluationism may well define a mechanism that perfectly matches that of the actuality operator as it is defined by MacFarlane. Thus, Supervaluationism has no crucial problem with actuality operators, contrary to what MacFarlane (2008) claims. The rejection of MacFarlane's criticism is relevant for at least two reasons. First, a relativist theory of truth-assertion is what MacFarlane (2003) himself is after. Second, his criticism to previous approaches to future contingents (including Supervaluationism) and his claim for the need of a new theory of future contingents are extremely influential today. If our considerations are right, however, MacFarlane's criticism has less punch than it is usually supposed to have.

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Vincent Grandjean
University of Neuchâtel
vincent.grandjean@unine.ch

A Model for the Open Future

Some recent papers offer good reasons to think that the asymmetry between the ‘open future’ and the ‘fixed past’ is to be characterized in ontological terms: there being facts of the matter about what did happen, but not about what will happen. This characterization seems indeed to be required to fully account for the various ways in which our intuition that the future is open and the past fixed may be expressed. In particular, the radical sense of openness in which time could come to an end (with no ontological commitment to future things standing in the way) can only be captured by an account that presupposes a real gap in ontology (there is no future). However, the main models of the temporal structure of the world do not reflect any asymmetry between the future and the past. According to permanentism and presentism, the future and the past are ontologically on a par. Permanentists hold that both the future and the past exist, while presentists hold that neither the future nor the past exists. In other words, the two main competing models of the

temporal structure of the world do not ontologically distinguish the future from the past (either both of them exist or none of them exists). Therefore, neither permanentism nor presentism seems able to accommodate the asymmetry reflected by our basic intuition regarding the nature of time. This conclusion leads to think that we should opt for another model of the temporal structure of the world that provides an ontological ground for the asymmetry in openness between the future and the past. In that respect, the growing block view, most famously put forward by C.D. Broad (1923), seems to be a natural candidate. This model is indeed committed to the existence of the past (and the present), but not to the existence of the future. It depicts the block universe as always increasing as more and more things are added on to its front end. However, since the growing block view is commonly introduced as a hybrid between permanentism and presentism (the growing blocker agrees with the permanentist that the past exists and agrees with the presentist that the future does not exist), it is often criticized for accumulating the flaws that are identified in the two traditional models. So, in order to provide a partial defense of the growing block view, I propose another way of introducing this model. In particular, I argue that it is not essential to the growing block view to be a hybrid between permanentism and presentism; what is essential to it is to depict time as being ontologically asymmetrical, i.e. to ontologically distinguish the future from the past. In that respect, the growing block view is no more to be seen as an ill-conceived hybrid, but rather as a real alternative: assuming that the asymmetry between the ‘open future’ and the ‘fixed past’ is to be characterized in ontological terms, the growing block view is better positioned than its rivals to accommodate it. My paper is structured as follows. In §1 “The Non-Existent Future”, I argue that an ontological characterization of the asymmetry between the ‘open future’ and the ‘fixed past’ is required to fully account for our intuitions about what did and will happen. In §2 “The McTaggartian Picture”, I present the classical way of introducing the principal varieties of A- theory: permanentism and presentism are two extreme forms of the A-theory, while the growing block view is a hybrid form. In §3 “The McTaggartian Picture revisited”, I explain why the classical picture is unsatisfying and I argue in favor of a new picture that highlights the geometrical

properties of these theories: permanentism and presentism are symmetrical, while the growing block view is asymmetrical. Finally, in §4 “A Model for the Openness”, I argue that, providing this new picture, the growing block view avoids the main pitfalls encountered by permanentism and presentism and is, therefore, well positioned to account for our intuitions regarding the nature of time.

Elton Marques
University of Rio de Janeiro
eltonmarques@campus.ul.pt

What is Fatalism?

Inwagen defines fatalism as a thesis that focuses on logic or conceptual necessity of everything that someone can do: Fatalism, as I shall use the term, is the thesis that it is a logical or conceptual truth that no one is able to act otherwise than he in fact does (Inwagen, 1986, p. 23). Taylor defines the same thesis as a doctrine about the inevitability of everything that happens (Taylor, 2015, p. 42). The first of both philosophers makes the criticism of Taylor's definition, which he thinks is inappropriate to a good characterization. The main reasons to that opinion are the two senses in which the notion of "inevitability" could be understood: the strong and the weak senses. In the stronger one, the states of affairs inevitable to me are those that happen to me but don't have any reason located in my action. For instance, when my action isn't relevant at all to determine what are the things that happen to me. Indeed, the things that happen are, in this case, totally disconnected to my actions. The weak sense of inevitability is the idea in which if something is unavoidable I will necessarily fail when trying to avoid it. In this case, my ignorance on how to proceed to avoid it needs to be unavoidable in the strong sense itself, i.e., my ignorance needs to be unavoidable despite everything I do (Inwagen, 1986, p. 25). In this article, I will defend Taylor's approach about what "fatalism" means, I will deal with Inwagen's notion and try to explain how can we understand the notion of inevitability.

Daniel P. Steele
University of Dallas
dsteele@udallas.edu

The Indeterminacies of Future Contingent Propositions

Philosophers who consider themselves realists in regard to propositions traditionally conceive of propositions as existing independently of mind and language. Some theorists (Chisholm and Prior, for example) also hold these characteristics to suggest that propositions exist eternally, and eternally have their truth values. Under a nondeterministic view of the universe, this position encounters epistemological and metaphysical difficulties when considering propositions that concern contingent future states of affairs. Some of the myriad ways in which the future can unfold will be incompatible with each other. If the future is truly undetermined, it appears that neither possible course of events represented by contradictory propositions about the future has any privileged ontological status. In such a light, it would seem as if the truth or falsity of statements about the future should be similarly undetermined. But if it is the case that statements about the future are neither true nor false, we appear to have contradicted a foundational claim of those who hold that propositions have truth values eternally. This paper examines several ways in which philosophers and logicians have attempted to understand the problem of future contingents. Given the inherent link between future contingent propositions and the nature of time, each mode of response is viewed in light of the temporal metaphysics assumed by each theory. Future contingent propositions are shown to be one of three kinds of things, and all three ways of understanding future contingents are incompatible with the realist's desire for a homogenous theory of propositions in which all propositions have truth values eternally. Either (1) future contingent propositions are indeterminate, (2) future contingent propositions change their truth values over time, or (3) future contingent propositions exist with determinate truth values but suffer from an epistemic indeterminacy not suffered by propositions regarding the present or past. We begin with Aristotle's discussion of the problem of future contingents,

from which we trace the main lines of response from contemporary philosophers, including Jan Łukasiewicz, Arthur Prior, and Saul Kripke, as well as several analytic thinkers who have offered their own interpretations of how evaluations of future contingents should proceed under Kripke's branching theory of time. It is shown how divergent views about the nature of time relative to McTaggart's A- and B-series have resulted in distinct views about future contingents, but none have escaped from the specter of indeterminacy.

Jacek Wawer

Jagiellonian University in Krakow

jacek.wawer@uj.edu.pl

Ockhamism without Molinism

“Ockhamism” and “Molinism” are labels used to designate distinct, but closely related theories in the debate over future contingents (the theories are inspired by, but not necessarily faithful to, the ideas of William of Ockham and Luis de Molina). According to Ockhamism some future contingents are true: a true future contingent faithfully represents what will happen in the actual future. It turns out that a simple-minded representation of Ockhamism within the framework of Branching Time proves to be highly problematic, as it gives no interpretation of future tense in non-actual circumstances and, as a result, disables compositional semantics. As a response, many BT theorists turned to Molinism—a theory that assigns truth values not only to actual future contingents, but also to merely possible ones. Such a theory was naturally understood as a strengthening of Ockhamism according to which some of the so-called counterfactuals of freedom (i.e., counterfactuals with a contingent consequent) are true. According to Ockhamism the future contingent, “The coin will land heads,” uttered before the coin toss may be true. According to Molinism, even if I don't toss the coin, the counterfactual future contingent “Had I tossed the coin, it would've landed heads,” may still be true. I will first explain that one can (and probably should) address the formal problems of Ockhamism without resorting to Molinism. Then, I outline the intuition that Molinism is indeed a strengthening of Ockhamism and

that one could subscribe to the second without subscribing to the first. Finally, I present a formal theory that allows Ockhamism without Molinism. According to this theory, every future contingent is either true or false, while all the counterfactual future contingents are neither true nor false.