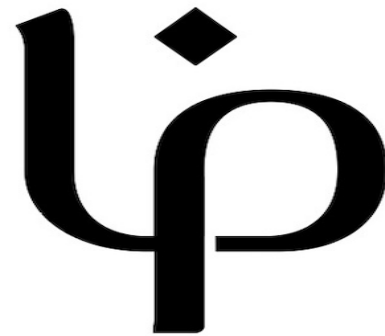




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<https://iuc.hr>

LOGIC IN PHILOSOPHY:  
Construction, Ontology, Identity

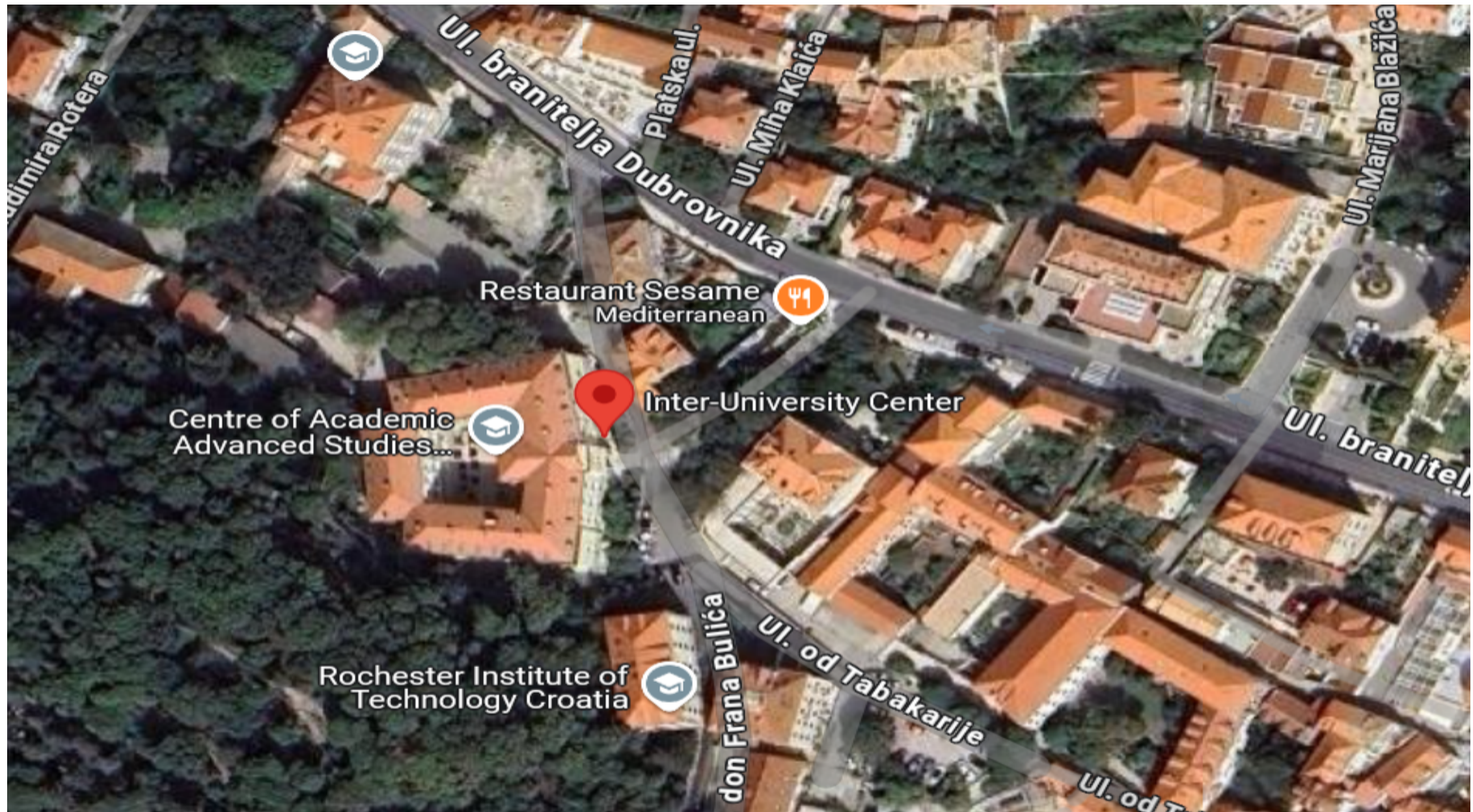


DUBROVNIK, CROATIA  
JUNE 1<sup>ST</sup> – 5<sup>TH</sup> 2026

Last update: Tuesday 2<sup>nd</sup> June, 2026, 13:07 CEST

Workshop website:  
<https://iuc.hr/programme/2080>

Gathering: Monday, June 1st, 09:00 at IUC (Ul. don Frana Bulića 4)



**Timetable** (click for abstract)

TIME (CEST)	MONDAY, JUN 1	TUESDAY, JUN 2	WEDNESDAY, JUN 3	THURSDAY, JUN 4	FRIDAY, JUN 5
09:00 - 10:00	GATHERING	<b>Pagin (Stockholm):</b> Switcher Semantics and quantification	<b>Pavlović (LMU):</b> Modal free logic and identity	<b>Sagi (Haifa):</b> Engineering mathematical concepts	<b>Salem (Vancouver):</b> Some thoughts on the theory of definition in Islamicate philosophy
10:00 - 10:15	OPENING	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
10:15 - 11:15	<b>Zach (Calgary):</b> Analytic philosophers and the automation of reasoning	<b>Smokrović (Rijeka):</b> Dialogue as a cooperative game	<b>Wehmeier (UC Irvine):</b> On Frege on identity	<b>Rechter (TAU):</b> Dedekind's Recursion Theorem in Kantian clothing	<b>Plebani (Turin):</b> Logic and so on...
11:15 - 14:15	LUNCH BREAK	RECEPTION 13:15	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK (UNTIL 14:30)
14:15 - 15:15	<b>Debeljuh (Rijeka):</b> Algorithms for uncertainty		<b>Kremer (TAU):</b> Should logicity be a relative notion?	<b>Visintini (SNS Pisa):</b> Noneist five-dimensionalism	<b>Koellner (Harvard):</b> Some remarks on the question "what is strict Finitism?" (14:30-15:30)
15:15 - 15:30	COFFEE BREAK	FREE AFTERNOON	COFFEE BREAK		COFFEE BREAK
15:30 - 16:30	<b>Halbach (Oxford):</b> Proving soundness		<b>Grabmayr (Tübingen):</b> What are finitary objects?		<b>Linnebo (Oslo):</b> Constructional ontology: What and why? (15:45-16:45)

## Abstracts

### Ante Debeljuh (Rijeka): Algorithms for uncertainty

Modelling knowledge and rational belief has been a well-studied topic in the last 60 years. We have developed formal tools that help us conceptualise logical infrastructures of our epistemologies through the use of intensional semantics within the framework of possible worlds. The majority of the models that were developed were static and dealt with what was in principle rationally inferable with the given information, i.e. what was compatible with what is known or believed by an agent (Stalnaker, 1999; Hintikka 1962). Immersing such a model into the framework theory of computation (Fagin et al, 1995), or more specifically distributed systems models, meant that we could (1) analyse local states of agents through computational notions of algorithms and protocols, and (2) study how they change through time. This reframing finally allowed us to differentiate between what is in principle inferable within the model, and what a specific agent is capable of computing given its dispositional algorithmic capacities and its corpora of knowledge and belief at a certain point in time within the execution of the system. The specific case on which I will focus in my talk is modelling reasoning under uncertainty, i.e. inference with incomplete information in multi-agent systems. I will attempt to show how we can model agents' interactions and choices that push toward a common epistemic goal with the notions of common, group, and distributed knowledge and belief.

References:

Fagin, R., Halpern, J.Y., Moses, Y. and Vardi, M.Y. (1995) Reasoning about Knowledge. Cambridge, MA: MIT Press.

Robert Stalnaker (1999) 'The problem of logical omniscience, II', in Context and Content: Essays on Intentionality in Speech and Thought. Oxford: Oxford University Press, pp. 255–273.

Hintikka, J. (1962) Knowledge and Belief: An Introduction to the Logic of the Two Notions. Ithaca, NY: Cornell University Press.

### Balthasar Grabmayr (Tübingen): What are finitary objects?

In this talk I will introduce a new conception of finitary objects and explore its proof-theoretical, computational and epistemological features.

### Volker Halbach (Oxford): Proving soundness

I might prove soundness for logic or of arithmetical theories. So the former would be about logical consequence, the latter about proof-theoretic reflection principles.

### Peter Koellner (Harvard): Some remarks on the question “what is strict Finitism?”

Abstract pending

### Attay Kremer (TAU): Should logicality be a relative notion?

I consider some desiderata for an account of logicality and suggest that they might best be satisfied by what I will describe as a relative notion of logicality. The suggestion is supported by some observed limitations of invariance (Tarski-Sher)-based accounts to accommodate identity challenges in a structuralist semantics. Logicality in a constructive type-theoretic context is also discussed.

### Øystein Linnebo (Oslo): Constructional ontology: What and why?

Gödel and others have suggested that a set can be regarded as constructed from its elements. Given any objects, we can apply the “set of” operation to construct the set of these objects. Inspired by Gödel's suggestion, this talk presents a far more general constructional approach to ontology. First, I clarify what it is for some objects to be “constructed” from others. The key is that all truths about the “new” objects that are constructed must reduce to truths about the “old” objects on which the construction is based. Then, I explain the central role of criteria of identity in the constructional approach. When constructing “new” objects, it is particularly important to stipulate what it takes for them to be identical or distinct. A variety of examples are provided, including mereological sums, ordered pairs, as well as cardinal and ordinal numbers. Finally, I present a logical framework in which this constructional approach can be developed. In this framework, a large and natural family of forms of construction can be proved to be consistent.

### Peter Pagin (Stockholm): Switcher Semantics and quantification

Switcher Semantics is a semantic framework that is basically characterised by allowing \*switching\*: when recursively applying a semantic function  $\mu$  to a complex term  $t$ , the semantic function applying to an immediate subterm  $t'$  of  $t$  may be a function  $\mu'$ , distinct from  $\mu$ . An operator-argument position pair is called a \*switcher\* if it induces such a switch. Switcher semantic systems do not satisfy the standard form of compositionality, but a generalized form, which allows greater flexibility. In earlier work (mostly published), some together with Kathrin Glüer, some with Dag Westerståhl, it has been applied to natural language constructions like proper names in modal contexts, general terms in modal contexts, indexicals in temporal contexts, quotation, and belief contexts. This talk will focus on quantifiers and quantification. First-order quantifiers can be regarded as switchers, switching from truth conditions to satisfaction conditions. The larger topic is quantification into switched contexts. I shall begin by giving an introduction to the framework.

### Edi Pavlović (LMU): Modal free logic and identity

Free logics, or logics free of existence assumptions, reject the standard but artificial stipulation in predicate logic that term/names must denote. A lot of intuitive justifications for this rejection arise from modal considerations (after all, Socrates *could have* not existed), but a systematic investigation of the relation of the extension of free logics with modality has so far been absent. Relying on

previous joint work with Norbert Gratzl (LMU) I explore the connection between the two, focusing primarily on possible formulations of identity.

### **Matteo Plebani (Turin): Logic and so on...**

An extremely simple kind of infinitary logic is presented and its foundational significance explored. The key idea is to introduce into the formal language a counterpart of the phrase “and so on...”. The motivation for doing so is twofold. First, to regiment certain parts of ordinary mathematical discourse within a formal language. Second, to reproduce at the level of formal regimentations the logical relations between ordinary claims. One way of implementing the key idea formally will be presented: namely, by admitting conjunctions and disjunctions of infinite but computably enumerable sets of formulas. Some complications raised by this approach, together with possible responses to them, will also be discussed.

### **Ofra Rechter (TAU): Dedekind’s Recursion Theorem in Kantian Clothing**

Abstract pending

### **Gil Sagi (Haifa): Engineering mathematical concepts**

Conceptual engineering is a booming topic in the philosophy of language and metaphilosophy today. Arguably, mathematics is a prime example of a discipline where conceptual engineering takes place and is successful. In the talk I’ll propose to view mathematical definitions and axioms as tools for conceptual engineering. I’ll raise two issues that have been broached in discussions of conceptual engineering: the implementation problem and topic continuity. I’ll focus on the first. I’ll provide a novel account of mathematical language which explains the increased control afforded when engineering mathematical concepts.

### **Sherif Salem (Vancouver): Some thoughts on the theory of definition in Islamicate philosophy**

In this talk, I am interested in exploring the reception of Aristotelian Logic in the Islamicate tradition. Primarily, I will focus on Ibn Taymiyya’s (1263–1328) critique of the theory of definition. Ibn Taymiyya’s arguments are quite interesting in themselves, regardless of how successful they are or whether they captured the essence of Aristotelian ideas. I will also explore the role of the theory of definition in the broader logical machinery of Islamicate philosophers/logicians, with a particular focus on Avicenna.

### **Nenad Smokrović (Centre for Logic and Decision Theory, Rijeka): Dialogue as a cooperative game**

Semantic games are, generally considered, strictly competitive, in game-theoretic terms, and in terms of logical game semantics, they have two possible payoffs, a winning strategy for only one player

and a losing strategy for the other. In other words, they are determined. I’m interested, instead, in a form of a dialogue that is not so often in the literature. It is a cooperative game in which players have the same goal but their actions are adversarial. Those games might be non-zero-sum games. The formal apparatus used in this paper is the dynamic epistemic logic with the plausibility models. The dynamic aspect concerns players’ rational responses to incoming information.

### **Andrea Visintini (SNS Pisa): Noneist five-dimensionalism**

In this paper, I present Noneist Five-Dimensionalism, a metaphysical theory that addresses the problem of modal persistence. According to this view, ordinary objects are five-dimensional, nonexistent entities that have distinct modal parts at different possible worlds, while only their actual modal parts exist. I provide formal semantics for the theory, demonstrating that it is a valid alternative to Transworld Identity and Counterpart Theory. Through the formal semantics, I resolve the two major problems of Five-dimensionalism: its unintelligibility and its alleged extravagant ontological commitment. In doing so, I introduce an original treatment of quantification.

### **Kai Wehmeier (UC Irvine): On Frege on identity**

What Frege’s views on identity were, as well as whether and, if so, how they changed over the course of his career, continues to be a matter of debate. In our recent book (Frege: Identity challenges reflection, OUP 2025), Ulrich Pardey and I argue that Frege never disavowed the theory of identity he proposed in *Begriffsschrift* and in fact defended rather than abandoned that theory in “On sense and reference”. In earlier work (“Frege’s *Begriffsschrift* theory of identity vindicated,” *Oxford Studies in Philosophy of Language* 1, 2019), we showed that, notwithstanding formal objections raised against it throughout the history of Frege scholarship, the *Begriffsschrift* theory is formally unimpeachable and, when added to first-order logic without identity, generates precisely ordinary first-order logic with identity. In my talk, I will review some of these issues and then investigate the historical origins of the, according to us, erroneous standard reading of Frege.

### **Richard Zach (Calgary): Analytic philosophers and the automation of reasoning**

The dream of making machines reason is as old as at least Leibniz. Work in artificial intelligence started in the 1950s with the almost simultaneous invention and implementation of proof search algorithms that are still used today. These algorithms were based on the work of logicians working on Hilbert’s program, especially Bernays, Herbrand, and Gentzen. Strikingly, most of the theoretical groundwork and early practical work was done by analytic philosophers. The talk will focus on the work preceding and influencing Alan Robinson’s resolution proof system, found in the work of W. V. O. Quine, Burton Dreben, Martin Davis & Hilary Putnam, and Bernard Symonds & Roderick Chisholm.