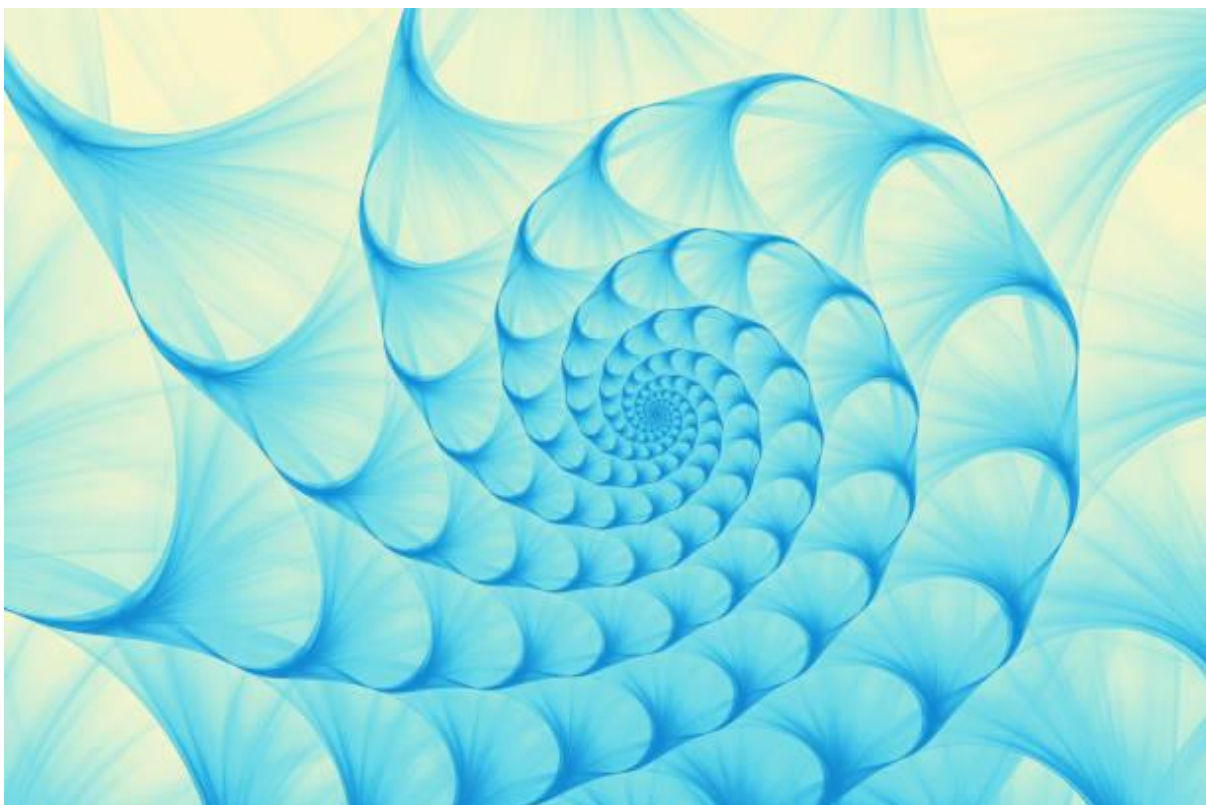


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**Workshop**  
**UNDERSTANDING vs. KNOWLEDGE IN SCIENCE, FICTION**  
**AND ART**  
**17.03 -19.03. 2025**

(New Conference Hall & First Conference Hall, Sofia University, Bulgaria)

**BOOK OF ABSTRACTS**



## **LLM's and Language Understanding**

Mitchell Green  
(University of Connecticut)

According to one tradition, understanding requires a conscious awareness of one's grasp of some fact or facts. By contrast, according to a different tradition, understanding does not require such awareness but instead consists in an ability to draw connections among different facts, and to be prepared to offer explanations of phenomena. From the perspective of this latter conception, I will consider whether AI systems such as Large Language Models understand any of the language they use in their verbal exchanges with human users. I will argue that there is no in-principle bar to LLM's understanding certain areas of natural language, but they will likely not be able in principle to understand those areas of language that require the possession of phenomenal concepts.

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## **The Package Deal Account of the Laws of Nature**

Radmila Jovanović Kozłowski and Andrej Jandrić  
(University of Belgrade)

The most prominent Humean approach to the laws of nature was developed by David Lewis and his adherents and it rests upon the Best System Account: laws are theorems of the system which best balances informativeness with simplicity. The predicates which appear in the axioms of the system should refer to perfectly natural properties only. Van Fraassen formulated a much discussed objection to this view, which challenged this restriction and brought into question the assumed relation between laws and natural properties. Motivated by this objection, Barry Loewer has developed the alternative to the Best System Account – his Package Deal Account of laws and natural properties. In our talk, we will examine Loewer's proposal and argue that it is not a favourable alternative to the original Humean approach. We will analyse three possible understandings of the Package Deal

Account and conclude that each of them is burdened with problems that the Best System Account did not face.

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### **Effortless Elegance and Other Epistemic Pleasures**

Mariona Eiren Miyata-Sturm  
(University of Oxford)

Scientists regularly appeal to aesthetic considerations such as elegance when evaluating theories, but how can aesthetics be epistemically relevant? I present a model of aesthetics in science which shows how aesthetic feelings can function as proxies for epistemic theoretical virtues. In brief, it says that aesthetic feelings regarding scientific theories are based on (meta)cognitive processes responding partly to features of epistemic value. For example, feelings of elegance arise when we effortlessly ‘connect the dots’ and signal that the theory strikes a good balance between simplicity and informativeness.

Recently, several philosophers have argued that aesthetics can help us gain understanding but not knowledge (e.g., Ivanova 2020, Elgin 2020). To get the desired contrast between understanding and knowledge they take understanding to be non-factive, but this leads to a dilemma. The account I present avoids this problem and can explain how aesthetics can provide useful restrictions on scientific theorising.

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### **Representations, Models, and Rules**

Mircea Dumitru  
(University of Bucharest and Romanian Academy)

In the paper I examine and assess three major approaches to semantics in philosophical logic: model-theoretic, truth-conditional, and proof-theoretic. These perspectives are assessed both independently and comparatively to understand their strengths and weaknesses in explaining the relationship between truth and meaning, particularly within a physicalist framework.

The model-theoretic semantics focuses on mathematical structures (models) that assign meanings to formal language symbols and evaluate the truth of statements. It highlights representational aspects, emphasizing satisfaction and truth values derived from domain-object

relationships. The truth-conditional semantics has been pioneered by Donald Davidson. This approach ties meaning to Tarski's theory of truth, where a sentence's meaning is equated with its truth conditions. It connects natural language semantics with truth-theoretic frameworks but faces criticism for not fully addressing intensional aspects of meaning. The proof-theoretic semantics is rooted in inferentialism. This approach (advocated by Wilfrid Sellars) links meaning to the rules governing the introduction and elimination of terms in logical systems. It emphasizes the role of linguistic practices and the inferential relations between statements in determining meaning.

The paper offers a comparative analysis of the three semantic views. Model-theoretic semantics is representational, while proof-theoretic semantics is rule-based, focusing on inferential roles. Truth-conditional semantics attempts a middle ground but is critiqued for its limited account of intensionality. The interplay between syntax and semantics is explored, especially through foundational theorems like soundness and completeness in first-order logic.

The paper raises some challenges: proof-theoretic approaches struggle with non-closure under entailment in epistemic contexts and limitations imposed by Gödel's incompleteness; model-theoretic and truth-conditional semantics face questions about their ability to fully integrate dynamic, rule-based aspects of meaning.

The paper concludes with a critical reflection on the complementary roles of these approaches in advancing our understanding of truth, meaning, and linguistic practices, suggesting a potential synthesis for future research.

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## **Mathematical Explanation in Science as Support for Mathematical Platonism**

Vladimir Drekalović  
(University of Montenegro)

Platonism, as it is usually understood in the ancient sense, represents a kind of metaphysical concept that is quite distant from the causal, material and realist understandings of philosophical explanations. Quine–Putnam indispensability argument from the previous century, and then Baker's Enhanced Indispensability Argument from this century, hinted at different tendencies when it comes

to the justification of mathematical Platonism. Materiality, causality, and the physical world are presented as realistic tools that could support mathematical Platonism.

We will analyze two examples of mathematical explanation in the physical/scientific world, which are very different in their structure and strength. Both of them can be classified as examples that illustrate the explanatory role of mathematical objects in science. However, the explanatory methodology in them is very different. In one case, it is a perfect means of explanation that undoubtedly leads to knowledge about physical phenomena, while in the second case, the explanatory methodology relies on certain assumptions that are not beyond doubt. Nevertheless, both examples, at different explanatory levels, represent a novelty when it comes to mathematical explanation in science – the explanatory role of the mathematical apparatus in the physical world.

The different explanatory power of each of these examples also raises a natural question: can Platonist arguments in mathematics rely with the same validity on cases that have significantly different methodological explanatory power? Doubts in this context obviously weaken the strength of the Platonist arguments that are inspired by the mentioned examples.

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## **Schemas in Language, Music, and Beyond: How Cross-Modal Correspondences Help Ground Meaning across Symbolical Forms**

Mihailo Antović  
(University of Niš)

Cognitive linguistics defines “image schemas” as functionalist, preconceptual mental topologies connecting visuo-spatial and haptic experience with the generation of abstract concepts, e.g. physical movement upward and improvement of someone’s circumstances, as reflected in the expression “things are looking up”. The construct is of course strongly related to the phenomenon of cross-modal correspondences (CMCs) in cognitive psychology, in which perception of notions in one

form (e.g. the sequencing of auditory frequencies) causes an intuitive representation in another (e.g. the sense of musical elevation).

In this talk I will present my group's research program on how schemas motivate conceptualization and, eventually, serve as an important factor for grounding meaning.

The first part presents my team's experiments on phenomena such as musical scales which "go upward" in some languages, yet "become smaller", "thinner" or "lighter" in others. We have investigated if such differences imply that musical concepts are strongly culturally grounded, or if some underlying similarities may still be proposed. To this end, we have conducted a series of studies asking young participants to describe isolated musical elements or short musical excerpts in controlled settings (Serbian, Roma, US, musically trained and untrained, sighted and congenitally blind children), to assess the appropriateness of visual animations following simple musical percepts on rating scales (musician and non-musician university students), and to describe excerpts from programmatic musical pieces containing such elements, with or without prior prompts (non-musician adults). Results overwhelmingly suggest that participants construct musical concepts based *not* on strong experiential clues (e.g. familiarity with notation systems or the way the concept is *called* in their language) but rather on more abstract properties inferable from the percepts on an underlying semantic level, e.g. interlocked combinations of schematic elements such as MAGNITUDE, FORCE, or PATH. This in turn puts to question the all-out revival of radical relativism in both linguistics and cognitive psychology and calls for a more balanced incorporation of universal and culturally-induced factors in musical concept construction.

In the second part, I will illustrate our more analytical and theoretical studies, such as the recent corpus-based appreciation of the first ten sonatas by Beethoven and texts from three reputable books about these sonatas, which show that the prevalence of particular clusters of image schemas in the music correlates with their appearance in language about this music. Since this indicates that such postulated schematic structures/CMCs operate across cognitive modalities and symbolical forms, in the final part I will discuss the place of schemas in my general theory of meaning construction, "multilevel-grounded semantics", with examples from classical music, fine arts, poetry, and popular science. Our data suggest that variances in the specification of schemas (e.g. the interpretation of an ascending piccolo motif as "running in a circle" instead of "rising up") often crucially motivate apparently divergent final interpretations of the pieces (e.g. the imagery of a pair of twisting dancers,

instead of a fish jumping out of water). This may provide a partial suggestion as to why interpretation of such pieces is open-ended, yet never arbitrary.

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### **“More Real than Reality”: Aristotle's Aesthetic Cognitivism**

Monika Jovanović  
(University of Belgrade)

Building on debates about aesthetic cognitivism, I examine the cognitive potential of literary fiction, starting from Aristotle's thesis that poetry (i.e., literature) “is a more philosophical and a more serious thing than history”. Offering an interpretation of Aristotle's *Poetics*, I argue that his implicit aesthetic theory, which we can outline by generalizing Aristotle's theses, can be understood as an example of virtue aesthetics. Drawing on Aristotle's moral philosophy and moral psychology developed in his *Nicomachean Ethics*, I interpret the key elements of his *Poetics*: the tragic error (*hamartia*), the tragic emotions (fear and pity), and the tragic catharsis.

Placing these ideas in the context of contemporary debates on aesthetic cognitivism and virtue aesthetics, I argue that Aristotle advocates a form of aesthetic cognitivism according to which poetry (i.e., literature) provides a profound understanding of human psychology and values, serving as a highly useful, or even exclusive, source of insights into the problems that deeply concern us as human beings. As Aristotle intuitively recognized, literary characters and situations represent a type of “concrete universals”, paradigms, or archetypes that, although fictional, are, to quote Dostoevsky's remark, “more real than reality itself.” By doing this, literature explores and expands the boundaries of lifelikeness in diverse ways. Sometimes, *prima facie* paradoxically, the works that disregard the demands of verisimilitude have the highest cognitive potential, providing a distinctive epistemic lens to our objective and subjective world.

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### **Does Listening to Music Contribute to Understanding Human Emotions?**

Marina Bakalova  
(Institute for Philosophy and Sociology, Bulgarian Academy of Sciences)

I claim that listening to music, like danger, heat or demeaning injustice has the power to modulate our interoceptive awareness. It does so in two ways. The first, and vastly more popular way,

is by involving the listener in an inner flow (Mihaly Csikszentmihalyi, 1990). I will use the notion of “flow” to refer to a sequence of bodily changes carrying the listener away in an immersive manner. The second way concerns listening to music “from within” with aesthetic appreciation. I will argue that during the second kind of listening, the listener often *grasps* the interoceptive modulations triggered by music as being analogous to the fine-grained phenomenal structure of human emotions.

Recent studies in the fields of cognitive psychology and neuroscience show that we can recognize our emotions through interoception (Sarah N. Garfinkel, Hugo D. Critchley 2012, Paula C. et al. 2021). Moreover, it has been experimentally suggested that individuals with higher interoceptive sensibility are better at inferring others’ emotional states. (Amelie M. Hübner et al. 2021). Starting from here, I will explore the potential of music to enhance interoceptive awareness of emotions, and the degree to which listening to music contributes to understanding human emotions.

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## **Representative Fictions and (Mis-)Understanding**

Kaley Rittichier  
(University of Connecticut)

Neo-cognitivist views of fiction claim that fiction can help us acquire understanding, such as an understanding of the experiences of others or the institution of slavery in twentieth century USA. They stand in contrast to views that maintain either that there is no epistemic benefit to be gained from fictions or that fiction can only offer propositional knowledge, such as the claim that there was a market for human hair in the nineteenth century. However, in such Neo-cognitivist theories, epistemic harm is either not considered or only considered in terms of propositional knowledge. To remedy this, I describe the concept of misunderstanding, the negative corollary to understanding. Despite the lack of discussion of misunderstanding within epistemic literature, misunderstanding offers us a way to discuss the complex negative effects of fabrications. Particularly, it allows us to consider when fabricated entities, such as fictional characters, might be *representative* or *unrepresentative* of their real counterparts, and thereby offer understanding or misunderstanding of the counterparts, respectively. A consequence of my view is a defense of how one may gain understanding from fiction.



The view is not that this is the most common consequence of engagement. Rather, I emphasize ways we can recognize certain fictions as more apt for understanding or misunderstanding.

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## **Representation and design in network models of category deficits**

Andrei Mărășoiu  
(University of Bucharest)

I tackle the debate in the metaphysics of mind which separates those who think concepts and semantic memory are amodal (independent of their sensorimotor origins; call them “rationalists”) from concept empiricists, who think concepts and semantic memory are formed by crossmodal integration of sensory sources that concepts are not independent of.

I argue that attention to neural-network modeling in category deficits undermines the debate between rationalists and empiricists about concepts. What are category deficits? Consider patients who lose mastery of some concepts but not of others. For instance, patients who retain their ability to recognize, use and describe animate objects, but not so for inanimate objects – sometimes with the strange exception of fruits and vegetables. Other patients have the reverse problem: they are apt in dealing with artefacts, but can neither recognize nor understand, when they interact with living things, and with people, perhaps family, that they are doing so.

Generational progress in modeling category deficits with neural networks has included many explanatory levels at once: behavioral, clinical, computational, and cognitive-psychological. Network plasticity and rewiring given local damage, as well as the interaction between different networks, have been invoked to support conflicting large-scale models of human semantic memory, either an “amodal hub” view I assimilate to a rationalist view, or a focus on crossmodal sensory integration which I assimilate to an empiricist view.

Instead, I argue that both rationalism and empiricism about human semantic memory are equally ill supported. This is because, in building networks to model the impaired semantic performance patients exhibit, we lack a principled way to distinguish (i) realist representationalist

assumptions about the nature of human memory of concepts; from (ii) design assumptions built into the neural networks. These assumptions are aimed at the simplicity, fluent functioning, computational tractability and ease of integrating clinical data into simplified network models.

For example, Farah and McClelland's classical 1991 study shows that networks that exhibit a type difference between visual units and verbal units and networks that don't exhibit such a difference perform just as well in modeling clinical data from patients with category deficits. Such a trait, I argue, is centrally at issue in the implementation of the difference between rationalism and empiricism when it comes to semantic memory. And the result strongly suggests we lack the evidence to discriminate rationalism and empiricism as competing hypotheses of human semantic memory, and that as a matter of principle. Differentiating verbal from visual units in a network modeling a patient's conceptual competence cannot be subsumed either under (i) at the expense of (ii), nor the other way around.

The wealth of literature that followed does not alter this result, but only points to the fact that a design perspective on networks sees such networks as implementing (with trade-offs) differing values such as adequacy to clinical data, explanatory power of psychological constructs, predictive power of clinical results, consistency, simplicity, and perhaps others values. Such an epistemologically rich and context-sensitive environment, I argue, undermines any sweeping large-scale metaphysical claims concerning the nature of the human memory of concepts.

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## **I Understand that I know Nothing: Perspectives of the Socratic Position in the Post-Truth Era**

Bojan Blagojević  
Faculty of Philosophy  
(University of Niš)

This presentation will explore the relevance of the Socratic position in the contemporary “post-truth era,” characterized by eroding norms of truthfulness and authority, particularly regarding public truth claims. Beginning with Socrates’ famous assertion, “I know that I know nothing,” I will interpret this as an expression of epistemological entropy, especially in the realm of values (primarily moral and political). Drawing on Kierkegaard’s existentialist interpretation of Socrates, I will examine the philosopher’s distinction between “objective” and “subjective” knowledge, interpreted as knowledge of facts and knowledge of values, to highlight how a misinterpretation of this distinction has contributed to the post-truth mindset. Ultimately, I will argue that the challenges faced by Socrates in his time and those confronting us today in combating post-truth are strikingly similar, despite the vast temporal and cultural differences.

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## **Counterfactual Theories of Causation and Causal Explanation: A Case for Absences and Omissions**

Milan Jovanović  
(University of Niš)

Causal explanation is often regarded as a central and desirable form of scientific explanation. However, it remains contentious, particularly when it appeals to absences and omissions – so-called ‘negative events’ – rather than positive occurrences. This paper explores the role of negative events in causal explanation, from the perspective of Counterfactual theories of causation and their associated accounts of causal explanation. In presentation of this

framework, I aim to emphasize the importance of (causal) relevance, a notion that complements counterfactual dependence as a crucial component of theory of causal talk, especially in the context of causal explanations. The central thesis advanced here is that absences and omissions function in causal explanations in ways that are fundamentally analogous to positive events. Despite their apparent metaphysical challenges, negative events exhibit no substantial differences from standard events in contexts such as explanation, prediction, or manipulation. However, as this paper seeks to demonstrate, one key distinction remains: absences and omissions impose an additional requirement of relevance within the framework of causal explanation, a requirement that is absent in the case of positive events. This difference introduces an additional layer of contextual dependency to cases of causal explanation involving negative events, thereby adding an extra dimension of relativity. If plausible, this distinction may help explain why such causal explanations are often perceived as more problematic and undoubtedly more controversial than those involving only positive events.

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### **Margaret Cavendish on Causation and Degrees of Matter**

Miloš Vuletić  
(University of Belgrade)

By the middle of the seventeenth century a dominant approach to understanding and explaining natural phenomena had emerged in European science and philosophy. Spearheaded by figures like Galileo, Hobbes, and Descartes, natural philosophers largely settled on mathematical physics and mechanical philosophy as devices most apt for deciphering the book of nature.

Margaret Cavendish's dissenting position is notable, among other things, for its coupling of an original brand of vitalist materialism with anti-mechanism. On one hand, she unabashedly held the view that all of nature is entirely material. But this was not the inert matter of the mechanists: in Cavendish's view, matter is self-moving, perceptive, and rational. On the other hand, Cavendish did not find plausible, and criticized thoroughly, mechanistic explanations of transfer of motion, causation, sensation, and cognition. Crucially, she endorsed an occasionalist account of causation. Whereas the mechanical philosophy viewed causal interactions of bodies as cases of collisions of bodies and transfers of motion from one body to another, Cavendish defended the view that bits of matter never moved one another, but that each initiated its own

motion instead. One body's movement is never a real cause of another body's movement; it is only an occasion for the latter to perform its own motion.

At the intersection of Cavendish's accounts of causation and matter there is a tension that has gone largely unnoticed and that I wish to examine in this talk. Cavendish claims that matter has three "degrees": rational, sensitive animate, and inanimate. These are thoroughly mixed and blended together throughout the material world so that there is no portion of matter that does not contain all three degrees of matter. Inanimate degree of matter is, according to Cavendish, incapable of self-motion. It is the sensitive animate degree of matter that is responsible for the motion of the inanimate matter. This raises the following difficulty: if there can be no transfer of motion, how is it that the sensitive animate matter moves the inanimate matter? The occasionalist solution is not available since inanimate matter is essentially incapable of self-motion. I will discuss Cavendish's motivation for distinguishing between the three degrees of matter, her conception of their commixture, and explore possible ways of resolving the tension.

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### **Understanding the Surrealist Eye**

Constantin Stoenescu  
(University of Bucharest)

In his famous *Manifeste du Surréalisme* André Breton proposes the exercise of creative freedom through detachment from the objective external world.. But what prevents us from playfully freeing ourselves from the external world, from the first-instance reality, in order to pass into super-reality? The organ that keeps us fixed in the captivity of so-called objectivity, in the so-called "iron cage" of a rationality that wants to capture the world independent of our minds, is the eye. Therefore, in order to pass from looking outward, from the perception that puts us in contact with the object, to looking inward, to the introspective plunge, the biological eye must be annihilated in favor of the inner eye, not only introspective, but also oneiric and occult. This aesthetic program is based epistemologically on a critique of representational realism and the rejection of the so-called myth of the given, and also a critique of the presupposition of a so called innocent eye. Based on the analysis of representative works of art, I propose to understand the surrealist eye in three artistically and aesthetically relevant ways, namely, the "suppressed eye", the "autonomous eye" and the "sublimated eye".