FILOZOFSKI FAKULTET, SVEUČILIŠTE U SPLITU

Okrugli stol i znanstveni susret (Program / Knjiga sažetaka)

FILOZOFSKI IZAZOVI SUVREMENE ZNANOSTI

Split, Hrvatska, 14. - 15. studenoga 2024.
Sveučilište u Splitu, Filozofski fakultet

FACULTY OF HUMANITIES AND SOCIAL SCIENCES, UNIVERSITY OF SPLIT

Roundtable and Scientific Meeting (Programme / Book of abstracts)

PHILOSOPHICAL CHALLENGES OF CONTEMPORARY SCIENCE

Split, Croatia, November 14 - 15, 2024
University of Split, Faculty of Humanities and Social Sciences

Organizator
Znanstveni centar “Berislav Žarnić”,
Filozofski fakultet Sveučilišta u Splitu

Organizacijski odbor
Dr.sc. Gabriela Bašić Hanžek
Prof.dr.sc. Tonći Kokić
Danica Radoš

Znanstveni odbor
Doc.dr.sc. Ljudevit Hanžek, Sveučilište u Splitu, Hrvatska
Prof.dr.sc. Slobodan Perović, Univerzitet u Beogradu, Srbija
Doc.dr.sc. Nina Petek, Sveučilište u Ljubljani, Slovenija
Doc.dr.sc. Marina Novina, Sveučilište u Zagrebu, Hrvatska
Prof.dr.sc. Vladimir Drekalović, Univerzitet Crne Gore, Crna Gora

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Nikša Varezić, prodekan za znanost I međunarodnu suradnju Filozofskog fakulteta Sveučilišta u Splitu / Vice-Dean for Science and International Cooperation of the Faculty of Humanities and Social Sciences, University of Split

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13.00
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SAŽECI IZLAGANJA / PAPER ABSTRACTS

SLOBODAN PEROVIĆ

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Evidencija, modeli, teorijski i metafizički principi u modernoj kosmologiji

Još od vremena Lukrecija, ideja o konačnom univerzumu kojim upravljaju prirodni zakoni koji se postepeno odvijaju zastupana je i usavršavana, posebno među misliocima poput Njutna, Kanta, ključnih predstavnika termodinamike i, u novije vreme, R. Penrouza. Međutim, s pojavom teorija Velikog praska, pojavila se mogućnost da određeni fizički zakoni — naročito Opšta teorija relativnosti — možda ne važe u početnoj singularnosti univerzuma, kako je prvi predložio Lemetr. Rasprava o ključnoj evidenciji i usklađenosti sa različitim kosmološkim modelima usko je povezana sa temeljnim teorijskim i opštim (metafizičkim) principima.

Prvo, neki teoretičari tvrde da kvantna mehanika može omogućiti probabilističko poreklo univerzuma u blizini ove singularnosti, dok kritičari smatraju da se pribegavanje kvantnim verovatnoćama koristi kao puko izbegavanje epistemoloških granica kosmologije.

Drugo, zagovornici modela stabilnog stanja pridržavaju se jake verzije Kopernikovog principa, kao primenjivog u svakom trenutku (izotropija i homogenost univerzuma kroz vreme), za razliku od slabije verzije ovog principa, koja se slaže sa modelom Velikog praska. Oni su svoje modele usavršavali kako bi se prilagodili novoj evidenciji, ali nikada nisu napustili temeljni princip. Nasuprot ovim stavovima, modeli koji sugerišu da fizički zakoni mogu proizaći iz graničnih uslova umesto da ih određuju, da fizički zakoni mogu varirati kroz vreme i prostor, ili da fizički zakoni i granični uslovi mogu imati samo asimptotsku povezanost, odbacili su obe verzije ovog principa.

Ovaj kontekst nas dovodi do razmatranja zajedničke i pojedinačne epistemološke odgovornosti u proceni privremeno marginalnih stavova — poput pridržavanja ili napuštanja određenih principa kao što je Kopernikov princip — u oblastima nauke s naglašenom teorijskom i modelnom neodređenošću u odnosu na dostupne dokaze kao što je kosmologija.

Evidence, Models, and Theoretical and Metaphysical Principles in Modern Cosmology

Since Lucretius, the idea of a finite universe governed by natural laws that gradually wind down has been proposed and refined, notably by thinkers like Newton, Kant, major figures in thermodynamics, and more recently, R. Penrose. The emergence of Big Bang theories, however, introduced the possibility that certain physical laws—particularly General Relativity—may not apply at the universe's initial singularity, as first suggested by Lemaître. The debate on the key evidential bases, and its accord with various cosmological models, has been intertwined with the underlying theoretical and more general (metaphysical) principles.

First, some theorists have argued that quantum mechanics could allow for a probabilistic origin of the universe near this singularity, while critics contend that resorting to quantum probabilities is a way to skirt the epistemic boundaries of cosmology.

Second, advocates of steady-state models stuck to the strong Copernican principle obtaining at all times (isotropy and homogeneity of the universe across time) in contrast to the weak version of the principle in accord with the Big Bang model. They refined their models to accommodate new evidence but never gave up the foundational principle. In contrast to both views, models suggesting that physical laws may result from boundary conditions rather than dictate them, that those physical laws could vary across time and space, or that physical laws and boundary conditions may have only asymptotic relationship, have abandoned both version of the principle.

We consider communal and individual epistemic responsibility in judging temporary outlier views – sticking or abandoning particular principles like Copernican principle - in cosmology as a field with pronounced underdetermination of theory and model by available evidence.

LJUDEVIT HANŽEK

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Neslaganje i napredak u filozofiji

Prema popularnom gledištu u epistemologiji, neslaganje dvaju epistemičkih drugova oko interpretacije iste dokazne građe dobar je razlog svakome od njih za suspenziju svojeg vjerovanja o tome što slijedi iz te dokazne građe. Primjena takvog stava na slučaj filozofije vodi do zaključka da za svaku filozofsku tvrdnju postoje dobri razlozi da se od nje odustane – jer za svaku od njih postoje jednako važni filozofi koji se oko njene istinitosti ne slažu. To je metafilozofski skepticizam, teza da u filozofiji nema napretka, a ni znanja. Izložit ću pretpostavke i posljedice takvog stava, te razmotriti alternativne poglede na fenomen trajnog neslaganja u filozofiji.

Disagreement and Progress in Philosophy

According to a popular view in epistemology, two epistemic peers disagreeing on the interpretation of same evidence provides good reason for both of them to suspend their judgement on the issue of what the said evidence entails. Applying that attitude to philosophy leads to the conclusion that for every philosophical claim there are good reasons for giving it up – because for each of those there are equally important philosophers that disagree on it. That is metaphilosohical skepticism, the thesis that there is no progress, nor knowledge in philosophy. I will present the assumptions and consequences of such a view and consider alternative perspectives on the phenomenon of persistent diagreement in philosophy.

VLADIMIR DREKALOVIĆ

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Savremene filozofske perspektive matematičkog platonizma

Ideja platonizma je antička zaostavština koja prožima najrazličitije filozofske ideje i usmjerenja. Jedno takvo polje u kojem možemo govoriti o platonizmu je shvatanje sadržaja koje grade različite matematičke teorije. Matematički platonizam ima svoju dugu tradiciju koja traje od Platona do danas. Postoji velika razlika između tradicionalnog matematičkog platonizma i onoga što se danas podrazumijeva pod tim pojmom. Starija verzija shvatanja je više metafizička i postavljena daleko od realističkog shvatanja matematičke stvarnosti, dok je novija verzija shvatanja čvrsto vezana za kauzalno-naučno shvatanje stvarnosti. Iz tih razloga možemo tvrditi da se savremeni matematički platonizam dominantno divergentno kreće u odnosu na vlastite istorijske početke.

Contemporary Philosophical Perspectives of Mathematical Platonism

The idea of Platonism is an ancient legacy that permeates the most diverse philosophical ideas and trends. One such field in which we can talk about Platonism is the understanding of the content that builds different mathematical theories. Mathematical Platonism has its own long tradition that continues from Plato to the present day. There is a big difference between traditional mathematical Platonism and what is meant by that term today. The older version of the understanding is more metaphysical and set far from the realistic understanding of mathematical reality, while the newer version of the understanding is firmly tied to the causal-scientific understanding of reality. For these reasons, we can claim that contemporary mathematical Platonism moves dominantly divergently in relation to its own historical beginnings.

GABRIELA BAŠIĆ HANŽEK

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Različite teorijske osnove u istraživanju argumentacije i njezine posljedice

U svojemu izlaganju predstavit ću tijek i rezultate dosadašnjeg istraživanja u području teorije argumentacije (uvjetno rečeno, neformalne logike). U prvome dijelu prikazat ću komparativnu analizu dvaju glavnih teorijskih pravaca u teoriji argumentacije, barem onome njezinu dijelu koji nije retoričkoga karaktera (ovdje nije riječ o pejorativnome značenju pojma retorički, već je isključivo linija demarkacije spram retoričkih istraživanja argumentacije). Radi se o pragmadijalektičkome pristupu, s jedne strane, i tzv. epistemološkim teorijama argumentacije, s druge strane. Pritom treba naglasiti da je pragmadijelektički pristup u većoj mjeri zaslužan za autonomnu poziciju teorije argumentacije. U drugome dijelu pozornost ću posvetiti teoriji pogreški u argumentaciji (*fallacies*), za koju se može ustvrditi da često postoji neovisno o teoriji dobre argumentacije, odnosno kao zasebno područje istraživanja bez jasnije teorijske pozadine o tome što jesu kriteriji dobrog argumenta i argumentacije.

Different Philosophical Underpinnings in Argumentation Theory and Their Consequences

In my talk I will present current results of my research in argumentation theory or what is often labeled informal logic (perhaps still more popular term). In the first half of my talk I will give a comparative analysis of two main non-rhetorical approaches within argumentation theory, i.e. Pragmadialectics and epistemological theories of argumentation. My use of the term 'rhetorical' here is not pejorative, it is used simply to establish a line of demarcation from subject of my interest towards rhetorical investigation of argumentation. It should be noted that Pragmadialectics is to be credited with argumentation theory today being an autonomous academic discipline. In the second part of my talk I will give insight into fallacy theory (theory of errors in argumentation), which is often investigated separately from theory of good argumentation, i.e. explicit or clear statement of criteria of good argument and argumentation.

DARKO BLAGOJEVIĆ

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Vitgenštajnove jezičke igre

Vitgenštajn je u „Filosofskim istraživanjima“ definisao jezik kao album koji čini bezbroj heterogenih jezičkih igara. Naziv jezičke igre, osmišljen je da apostrofira polisemičnost i kontekstualnu determinisanost jezika. On označava široku lepezu pojava, od slikovitih opisa primitivnih formi jezika i deskripcije procesa kao što je učenje djece izvornog jezika, pa sve do onih ilustracija koju čine jezik i djelatnost koja ishodi iz istog.
Vitgenštajnov glavni zadatak u poznom periodu stvaralaštva jeste da filosofski problemi iščezavaju u jezičkoj igri koja savršeno funkcioniše u svojoj potpunoj preciznosti i jasnoći. Kada jezik sam dosegne takav stupanj vlastite upotrebe da se u njemu više ne pojavljuju nikakve konfuzije i problemi, tada možemo reći da su svi filosofski problemi iščezli.

Wittgenstein's Language Games

In *the Philosophical Investigations* Wittgenstein defines language as an album composed of countless heterogeneous language games. The concept of the language game is designed to apostrophize the polysemy and contextual determinism of language. It denotes a wide range of phenomena, from vivid descriptions of primitive forms of language and description of processes such as children's acquisition of the native language, to the illustrations of language and the activity that results from it.
In his late work, Wittgenstein's main task is to make philosophical problems disappear in a language game which works perfectly in its precision and clarity. When the language reaches a level of use which generates no confusions and problems, we can say that all philosophical problems have disappeared.

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Ontološki status matematičkih predmeta u Aristotelovoj *Metafizici*

Pitanje o postojanju matematičkih predmeta i njihovom ontološkom statusu—odnosno, postoje li u osjetilnim supstancijama—predstavlja ključnu filozofsku poteškoću (aporiju) unutar Aristotelove filozofije matematike. Aristotel razmatra ova pitanja u kontekstu svojih metafizičkih istraživanja. U njegovoj filozofiji, matematika, zajedno s fizikom i metafizikom, spada među teorijske znanosti koje proučavaju biće. Fizika proučava osjetilne i pokretne supstancija, metafizika se bavi nadosjetilnim i nepokretnim supstancijama, dok matematika istražuje osjetilne, ali nepokretne aspekte tih supstancija. Aristotel postavlja pitanje postoje li matematički predmeti kao osjetilne supstancije ili ne. Njegovo poimanje matematičkih predmeta može se sagledati kroz nekoliko različitih interpretacija. Prva je Learova interpretacija (1982), koja Aristotelu pripisuje oblik matematičkog fikcionalizma. Prema ovoj interpretaciji, matematički predmeti postoje, ali ih prilikom proučavanja tretiramo kao korisne fikcije koje nam pomažu u daljnjim istraživanjima. Druga je Muellerova interpretacija (1970; 1990), prema kojoj Aristotelu možemo pripisati oblik matematičkog literalizma: postoji djelomično preklapanje između matematičkog i fizičkog područja. Treća, novija interpretacija koju iznosi Katz (2019; 2022), prikazuje matematičke predmete kao svojstva osjetilnih supstancija ili kao tzv. "kooky objects".

The Ontological Status of Mathematical Objects in Aristotle's *Metaphysics*

The question of the existence of mathematical objects and their ontological status—specifically, whether they exist in sensibles—represents a central philosophical problem (*aporia*) within Aristotle's philosophy of mathematics. Aristotle examines these issues in the context of his metaphysical inquiries. In his philosophy, mathematics, along with physics and metaphysics, belongs to the theoretical sciences that study being. Physics investigates sensible and movable substances, metaphysics deals with non-sensible and immovable substances, while mathematics examines the sensible yet immovable aspects of these substances. Aristotle raises the question of whether mathematical objects exist as sensibles or not. His understanding of mathematical objects can be viewed through several different interpretations. The first is Lear's interpretation (1982), which ascribes to Aristotle a form of mathematical fictionalism. According to this interpretation, mathematical objects exist, but when studying them, we treat them as useful fictions that assist us in further research. The second is Mueller's interpretation (1970; 1990), which ascribes to Aristotle a form of mathematical literalism: there is partial overlap between the

mathematical and physical realms. The third, more recent interpretation presented by Katz (2019; 2022), views mathematical objects as properties of sensible substances or as so-called "kooky objects."

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Zapisano u zvijezdama

Astronomska spektroskopija je proučavanje kosmosa pomoću tehnika spektroskopije za merenje spektra elektromagnetnog zračenja, uključujući vidljivu svijetlost i radio talase koji se zrače od zvijezda i drugih nebeskih objekata. Zvjezdani spektar može otkriti mnoga svojstva zvijezda, kao što su njihov hemijski sastav, temperatura, gustina, masa, udaljenost, osvjetljenje i relativno kretanje pomoću mjerenja Doplerovim pomakom. Spektroskopija se takođe koristi za proučavanje fizičkih svojstava mnogih drugih vrsta nebeskih objekata poput planeta, maglina, galaksija i aktivnih galaktičkih jezgara.

Written in the Stars

Astronomical spectroscopy is the study of the cosmos using spectroscopy techniques to measure the spectrum of electromagnetic radiation, including visible light and radio waves emitted by stars and other celestial objects. A stellar spectrum can reveal many properties of stars, such as their chemical composition, temperature, density, mass, distance, luminosity, and relative motion by measuring the Doppler shift. Spectroscopy is also used to study the physical properties of many other types of celestial objects such as planets, nebulae, galaxies, and active galactic nuclei.

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Potencijalna uloga Parasitengona kao činioca biokontrole

Grinje, ili kako ih u svakodnevnom životu često zovemo „krpelji“ dio su ljudske kulture još od vremena kada je Homer opjevao parazite na psu Ulysses’ prije skoro dvadeset devet vjekova, a predmet ozbiljnih naučnih proučavanja su poslednja dva vijeka. One su malena, ali moćni bića, mikroskopske veličine, pripadaju redu Acarina. Biološki su veoma raznovrsne, abudantne i uspješne arahnide i imaju primat nad insektima u prilagodljivosti, izraženu kroz izuzetnu moć disperzije, načinu ishrane, fekunditetu, veličini tijela i različitim oblicima reprodukcije. Ova zagonetna stvorenje imaju opštu distribuciju, od nevjerovatnih staništa do veoma pristupačnih i na oko običnih kao npr. biljke, planine, pustinje, plastenici, slatka voda, slana voda, organski otpatci, u klicama žitarica i lisnim galama, tijelu životinja, kao ektoparaziti i endoparaziti, od slobodnoživeće ka parazitskoj formi, kao univoltine i multivoltine vrste.
S druge strane, postoji velika grupa predatorskih grinja koje se hrane štetnim grinjama i malim mekanim insektima kao što su: tripsi, vaši i njihova jaja. Grinje ovih familija imaju izuzetnu važnost u biološkoj kontroli i zaštiti od štetočina.
Kohorta Parasitengona (Acari: Prostigmata) čini jedan od najdiverzibilnijih taksona u okviru Chelicerata i najuspješniju monofiletičku liniju u okviru Trombidiformes, sa posebnim osvrtom na bogatstvo vrste, nastanjene biotope i načine života.
Zato, znajući važnost ovih grinja kao činilaca u biološkoj kontroli, biće potrebno više vremena da se iskoriste ova korisna stvorenja u kontroli opasnih grinja i štetnih insekata. Neselaktivna upotreba pesticida za program kontrole štetočina u današnje vrijeme remeti prirodni balans i izaziva zagađenje životne sredine. Potencijalna uloga kao činioca biokontrole u IPM (integrisanom menadžmentu štetočina), je privukla pažnju velikom broju naučnika, koji se bave zaštitom usjeva, da istražuju ovu zanemarenu oblast u akarologiji.

The Potential Role of Parasitengone as a Biocontrol Agent

Mites, or as we often call them "ticks" in everyday life, have been a part of human culture since Homer sang about the parasites on Ulysses' dog almost twenty-nine centuries ago, and they have been the subject of serious scientific studies for the last two centuries. They are small but powerful creatures, microscopic in size, belonging to the order Acarina. They are biologically very diverse, abundant and successful arachnids and have priority over insects in adaptability, expressed through exceptional power of dispersion, feeding method, fecundity, body size and different forms of reproduction. These enigmatic creatures have a general distribution, from incredible habitats to very accessible and

seemingly ordinary ones like e.g. plants, mountains, deserts, greenhouses, fresh water, salt water, organic waste, grain sprouts and leaf galls, animal bodies, ectoparasites and endoparasites, from free-living to parasitic form, as univoltine and multivoltine species.
On the other hand, a large group of predatory mites feed on harmful mites and small soft insects such as thrips, lice and their eggs. Mites of these families are extremely important in biological control and protection from pests.
The Parasitengona cohort (Acari: Prostigmata) constitutes one of the most diverse taxa within Chelicerata and the most successful monophyletic line within Trombidiformes, with special reference to species richness, inhabited biotopes and ways of life.
Therefore, knowing the importance of these mites as agents in biological control, it will take more time to utilise these beneficial creatures in the control of dangerous mites and harmful insects. The non-selective use of pesticides for pest control programs nowadays disturbs the natural balance and causes environmental pollution. Its potential role as a biocontrol agent in IPM (integrated pest management) has attracted the attention of many crop protection scientists to investigate this neglected area in acarology.

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Filozofske implikacije redefiniranja koncepata zdravlja i bolesti

Zdravlje i bolest, mentalna bolest, normalno i abnormalno, a danas i neurodivergentno, temeljni su koncepti brojnih znanstvenih disciplina. No od prvih teorija o ljudskom zdravlju do danas definiranje tih koncepata i njihovo razgraničavanje višestruk je filozofski izazov za medicinu, psihologiju, sociologiju i psihijatriju. Štoviše, razvoj medicine, psihologije, sociologije i psihijatrije dovodi do novih razumijevanja čovjekova zdravlja i stanja bolesti, razlučivanja normalnog od abnormalnog, te otkriva potrebu za njihovim redefiniranjem. Tako empirijske i društvene znanosti svojim razvojem (a) utječu na redefiniranje temeljnih koncepata kojima se služe; (b) upućuju na potrebu za interdisciplinarnim i komplementarnim pristupom pitanju čovjekova zdravlja; (c) indiciraju na implikacije različitih poimanja zdravlja i bolesti, normalnog i abnormalnog na čovjekovo mentalno zdravlje i realizaciju kvalitete čovjekova života i (d) otkrivaju vlastitu filozofičnu narav i trajnu potrebu za kritičkim preispitivanjem vlastitih fundamenata iz metafizičke, logičke, epistemološke i etičke perspektive.

Philosophical Implications of Redefining the Concepts of Health and Illness

Health and illness, mental illness, normal and abnormal, and today also neurodivergent, are fundamental concepts of numerous scientific disciplines. But from the first theories about human health to the present day, defining these concepts and demarcating them is a multiple philosophical challenge for medicine, psychology, sociology and psychiatry. Moreover, the development of medicine, psychology, sociology and psychiatry leads to new understandings of human health and disease states, distinguishing normal from abnormal, and reveals the need for their redefinition. Thus, the development of empirical and social sciences (a) affects the redefinition of the fundamental concepts they use; (b) indicate the need for an interdisciplinary and complementary approach to the issue of human health; (c) indicate the implications of different concepts of health and disease, normal and abnormal on human mental health and the realization of the quality of human life and (d) reveal their own philosophical nature and the permanent need for a critical review of their own foundations from a metaphysical, logical, epistemological and ethical perspective.

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Deskriptivistička analiza naučnog modelovanja i njeni metodološki i epistemološki izazovi

Naučni modeli predstavljaju jedan od osnovnih predmeta deskriptivističke analize naučne prakse. Od pedesetih godina prošlog veka, deskriptivistički orijentisani autori nastoje da kroz analizu različitih instanci modelovanja u nauci, ispitaju postoje li strukturalna i funkcionalna svojstva koje svi model-sistemi dele, odnosno formulišu skup generalnih zahteva koje sistem mora da zadovolji kako bi se opravdano nazvao „naučnim modelom“. Ovaj pristup filozofskoj tematizaciji modelovanja suočava se sa nekoliko metodoloških i epistemoloških izazova. Iscrpnu metodološku kategorizaciju naučnih modela otežava raznovrsnost struktura i procesa koje naučnici koriste kao modele, dok izgradnju detaljne epistemologije modelovanja otežava kompleksnost modela koje zatičemo u savremenoj nauci (posebno kompjutacionih modela i modela sa integracijom VI sistema) i raznovrsnost njihovih funkcija. U ovom izlaganju ćemo sistematizovati savremenu filozofiju modelovanja, predstaviti njene najproblematičnije domene i istražiti potencijalne trajektorije za razvoj ovog mladog ogranka filozofije nauke.

Descriptivist Analysis of Scientific Modeling and its Methodological and Epistemological Challanges

Scientific models are one of the central subjects of descriptivist analysis of scientific practice. Since the 1950s, descriptivist authors have sought to analyze various instances of scientific modeling in order to determine whether we can establish a set of structural and functional properties that are common to all model systems or formulate a set of general requirements that a system must satisfy in order to be justifiably referred to as a “scientific model”. This approach to philosophical thematization of modeling faces several methodological and epistemological challenges. An exhaustive methodological categorization of scientific models is made difficult by the diversity of structures and processes that scientists utilize as models, while the construction of a comprehensive epistemology of scientific modeling is hindered by the complexity of models found in contemporary science (especially computational models and data models with AI integration) as well as the diversity of their functions. In this presentation, we will systematize the contemporary philosophy of modeling, present its most problematic domains, and explore the most promising trajectories for future research within this branch of philosophy of science.

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Dignāgov prispevek k razvoju budistične epistemologije s posebnim ozirom na vprašanje zaznavanja

Prispevek predstavi nekatere najpomembnejše segmente filozofske misli Dignāge (ok. 480 n. št.– 540 n. št.), utemeljitelja budistične logike in epistemologije, ki je izhajal iz idejnih okvirov šole *yogācāra*, pri čemer je v prvem delu na kratko začrtan njen nauk o zavesti (*vijñāna*), na katerem je filozof osnoval svojo epistemologijo. Nadalje prispevek oriše budistično kritiko nauka o sredstvih pravilnega spoznanja (*pramāṇa*) hindujske šole logike *nyāya* in predoči nekatere Dignāgove pomisleke, nakar predstavi njegovo pojmovanje zaznavanja (*pratyakṣa*) v navezavi na izhodiščno idejo o načinu obstoja zunanjih objektov, ki so, v skladu s pozicijo *yogācāre*, zgolj mentalne modifikacije nerazsvetljene zavesti, ki tvori izkrivljene predstave o svetu. Pri tem osvetli tudi Dignāgovo kritiko atomizma hindujske šole *vaiśeṣika* ter nauka o celotah in univerzalijah ter predstavi filozofovo znamenito teorijo izključevanja (*apoha*), ki jo, v luči budistične filozofije o nestalnosti, opredeli kot najodličnejši način opisovanja in razumevanja pojavnosti. V zadnjem delu se prispevek posveti enemu od Dignāgovih najzanimivejših prispevkov k nauku o zaznavanju, namreč o zavedanju zaznavanja, ki se nanaša na hkratnost neposrednega zaznavanja zunanjih objektov in samega dejanja zaznavanja, kar je ob številnih pomislekih sodobnikov iz lastnih miselnih obzorij in filozofov rivalskih šol utemeljeval na nauku o *ālayavijñāni*, t. i. shrambi zavesti.

Dignāga's Contribution to the Development of Buddhist Epistemology With Special Reference to the Question of Perception

The paper presents some of the most important segments of the philosophical thought of Dignāga (c. 480 CE–540 CE), the founder of Buddhist logic and epistemology, associated with the conceptual framework of the *Yogācāra* school. In the first part it briefly outlines *Yogācāra*'s theory of consciousness (*vijñāna*), on which Dignāga established his epistemology, and then outlines the Buddhist critique of the doctrine of the means of valid knowledge (*pramāṇa*) from the Hindu school of logic *Nyāya* and introduces some of Dignāga's objections. In the third part paper presents Dignāga's conception of perception (*pratyakṣa*) in relation to the initial idea of the mode of existence of external objects, which, according to the position of *Yogācāra*, are mere mental modifications of the unenlightened consciousness which forms distorted conceptions of the world. Paper also sheds light on Dignāga's critique of *Vaiśeṣika*'s atomism, the doctrine of wholes and universals and introduces the philosopher's famous theory of exclusion (*apoha*), which he identifies, in the light of the Buddhist philosophy of impermanence, as the most excellent way of describing and understanding phenomena. In the final part, the paper turns to one of Dignāga's most interesting contributions to the theory of perception,

namely the awareness of perception, which refers to the simultaneity of the direct perception of external objects and the act of perception itself, which, in the face of numerous objections of contemporaries from his own tradition and philosophers of rival schools, he argued on the theory of *ālayavijñāna*, the so-called storehouse of consciousness.

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Darvinova revolucija: filozofska i istorijska analiza razvoja ideje o evoluciji prirodnih vrsta

Tomas Kun ispravno zapaža da je istoriju nauke obeležilo nekoliko velikih revolucija. U 19. veku, ova istorija je obogaćena još jednom značajnom revolucijom – Darvinovom teorijom o evoluciji prirodnih vrsta. Dok se pojedini autori fokusiraju na kritičku analizu pojedinačnih aspekata ove teorije, drugi ispituju uticaj tzv. Darvinovih prethodnika na razvoj Darvinove misli. Neki se, pak, opredeljuju na ispitivanje odnosa koji naizgled postoji između Darvinove teorije i savremenih bioloških teorija o poreklu, evoluciji i distribuciji života. Može se reći da moje istraživanje obuhvata sva tri pomenuta pristupa. S jedne strane, ono podrazumeva kritičko razmatranje Darvinove teorije o evoluciji prirodnih vrsta; s druge strane, moj cilj predstavlja i prikazivanje filozofskog i istorijskog razvoja same ideje o promenljivosti i evoluciji organizama. Shodno tome, u svom istraživanju zalazim „izvan“ Darvinove teorije radi ispitivanja različitih (anti)evolucionih stavova njegovih prethodnika, kao i savremenih autora koji su svoje teorije izgradili polazeći upravo od Darvinove revolucione misli.

Darwin’s Revolution: Philosophical and Historical Analysis of the Idea of the Evolution of Natural Species

Thomas Kuhn rightly observes that the history of science has been marked by several great revolutions. In the 19th century, this history was enriched by another significant revolution –Darwin's theory of the evolution of natural species. Whilst some scholars focus on critical analysis of the individual aspects of this theory, others examine the influence of the so-called Darwin's predecessors on the development of Darwin’s thought. Some, on the other hand, choose to explore the relation that apparently exists between Darwin’s theory and contemporary biological theories about the origin, evolution, and distribution of life. It can be said that my research includes all these approaches. On the one hand, it is based on critical examination of Darwin’s theory of the evolution of natural species; on the other hand, my goal is to represent the philosophical and historical development of the very idea of the variability and evolution of organisms. Accordingly, I go “beyond” Darwin's theory, and explore various (anti)evolutionary hypotheses of his predecessors, as well as contemporary scholars who built their theories starting from Darwin’s revolutionary thought.

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O postanku života: nema teorije niti eksperimenta

Znanost o postanku prvog života pati od dva, ključna nedostatka: nema teorije koja objašnjava kako je nastao život niti postoji eksperiment koji bi to dokazao. Suvremeni znanstveni pokušaji objašnjenja nastanka prvog života temelje se Oparin-Haldaneovoj hipotezi o predbiotičkoj sintezi makromolekula, njihovom nastanku prije i izvan živoga. Ova se hipoteza kasnije pokušala eksperimentalno provjeriti (i po eventualno dokazati) Miller-Ureyevim eksperimentom. Eksperiment je proizveo neke relativno jednostavne organske spojeve, koji bi mogli dovesti do mreže jednostavnih reakcija koje proizvode tri glavne klase biomolekula (nukleinske kiseline, aminokiseline i lipide) potrebne za početak najranijeg oblika života. Danas prevladava mišljenje da je eksperiment postavljen na krivim pretpostavkama o sastavu najranije Zemljine atmosfere. Postoji konsenzus da eksperiment nije rezultirao očekivanom eksperimentalnom promjenom od anorganskih molekula do života.

On the Origin of First Life; no Theory neither Experiment

The science of the origin of the first life suffers from two key shortcomings: there is no theory that explains how life arose, nor is there an experiment that would prove it. Modern scientific attempts to explain the origin of the first life are based on Oparin-Haldane's hypothesis about the prebiotic synthesis of macromolecules, their origin before and outside of life. This hypothesis was later tried to be experimentally verified (and possibly proved) by the Miller-Urey experiment. The experiment produced some relatively simple organic compounds, which could lead to a network of simple reactions that produce the three main classes of biomolecules (nucleic acids, amino acids, and lipids) needed to start the earliest forms of life. Today, the prevailing opinion is that the experiment was based on wrong assumptions about the composition of the Earth's earliest atmosphere. There is a consensus that the experiment did not result in the expected experimental change from inorganic molecules to life.