

Department of History and Philosophy of Science

Newsletter no. 10

July-September 2025

The Newsletter of the Department of History and Philosophy of Science (HPS) aims to inform about activities of its members of staff and students. The History and Philosophy of Science is an interdisciplinary academic field, which studies science as a complex historical, social, and cultural phenomenon and highlights the philosophical dimensions of its theories and practice. It examines the philosophical, conceptual, and historical approaches to science in general, as well as to a variety of particular research fields, including the humanities and social sciences, natural sciences, psychology and cognitive sciences, life and medical sciences, mathematics and logic, and new technologies. The <u>faculty members</u> of the Department include some of the world experts in their respective fields, while several of the members lead or collaborate in international research projects. The Department consists of three Divisions: History of Science and Technology, Philosophy and Theory of Science, and Technology, and Cognitive Science. It offers the sole <u>undergraduate</u> programme of studies on History and Philosophy of Science in Greece and 9 postgraduate programmes of studies in both Greek and English, which cover a wide range of philosophical topics, the history of science and technology, studies in society, science and technology, digital humanities and augmented textual studies, and cognitive psychology. HPS is among the highest rated of humanities departments in Greece, in terms of international research citations.

Research News

• HPS/NKUA will participate in the period 2025-2028 as a partner in a new programme for the critical shaping and use of Artificial Intelligence that has been selected for funding by the European Union, entitled "BloomingAI Developing an AI-powered Open-Source Learning Platform based on Bloom's taxonomy" (Erasmus+, total 400,000 euros, IFE/NKUA budget: budget: 120,000 euros, IΦE/NKUA scientific coordinator: **Aristotle Tympas**, Professor & Director of the anglophone interdepartmental graduate program "Science, Technology, Society--Science and Technology Studies" of the Departments IΦE & Informatics and Telecommunications of the NKUA). It is a programme that combines in an interdisciplinary manner the scientific areas "Artificial Intelligence (AI) and data usage", "Digital skills and compe-

tences" and "New learning and teaching methods and approaches". The other two partners are university units in Norway and Luxembourg, from the Faculty of Humanities (coordinated by Professor Apostolos Spanos, an expert in the use of Artificial Intelligence in the context of history teaching) and from the for pioneering Centre Artificial **Intelligence Research** (CAIR) of the **University of Adger** (lead partner), as well as from the Luxembourg Centre for Contemporary and Digital History (C²DH) the University of **Luxembourg**, which is a well-known internationally research and teaching center in Digital Humanities, Digital History and Science Communication (director: Professor **Andreas Fickers**).

Blooming AI aims to support teaching related research through appropriate configuration and use of Artificial Intelligence, utilizing, among others, Bloom's pedagogical taxonomy. The main activities of the Blooming AI program include assessing needs and gaps in the use of Artificial Intelligence in education, configuring teaching and assessment technology according Bloom's taxonomy, piloting improving learning strategies Artificial Intelligence in higher education institutions, as well as disseminating the results through workshops, seminars and dialogue with teachers and those responsible for shaping technology policy for Artificial Intelligence. The goal is to create tools that enhance the active participation of students, the responsible use of artificial intelligence by the academic community, the promotion of interdisciplinary collaboration for the development of innovative educational

practices, as well as the formation of sustainable partnerships between universities for the long-term integration of Artificial Intelligence in education, at the university and in general. The HPS/NKUA research team will be supported, among others, by a network of teachers from secondary and primary education who hold PhDs in subjects of relevance to *Blooming AI*.

• Continuous increase in the participation (250+ researchers) and the available budget (500,000+ euros) of a European program on Big Data, Artificial Intelligence and Algorithms, as linked to the shaping of Borders and Migration, coordinated by HPS/NKUA.

After two (out of a total of 4) years since the start of the European Union-funded **COST** Action 'DATAMIG—Data Matters: Sociotechnical Challenges of European Migration and Border Control', the number of researchers who have become members of its research network and participate in its activities has exceeded the 250, covering most countries in Europe and its neighboring regions. As a result, the funding authority has increased the available budget, which for the first three years has amounted to more than 500,000 euros, for the appropriate support of a number of international conferences, workshops, summer and other schools researchers, young in many countries of Europe. The increase in the budget allows for the allocation of a larger number of fellowships (STSM), through the NKUA (grant holder institution), to young researchers from all over Europe and from other countries, with the aim of supporting visits to enhance their research. DATAMIG is coordinated by members HPS/NKUA community (DATAMIG COST Action Chair: Aristotle Tympas, professor, director of the anglophone interdepartmental graduate program 'Science, Technology, Society--Science and Technology Studies' Departments of IΦE & Informatics and Telecommunications of NKUA Action DATAMIG COST Scientific Representative: Olga Lafazani, Marie Curie Postdoctoral Fellow, Humboldt University, Berlin).

• Following the invitation of the founder of the Institute for Ethnopharmacological Studies & Phytotherapy at the National and Kapodistrian University of Athens, Professor of the Department of Pharmacy, Nektarios Aligiannis, the Associate Professor Petros Bouras-Vallianatos has recently taken on the

organisation and direction of the section of historical research of the Institute. The 5-member historical research team of the Institute, under the direction of Prof. Bouras-Vallianatos, is participating in the European Program ETHCSTWIN -Reinforcing the Scientific Excellence of the Institute for Ethnopharmacological **Studies** and Phytotherapy (IESP) through Twinning with Computer Science (CS), under the scientific direction of Prof. Aligiannis, with the goal of developing an innovative database future for ethnopharmacological studies of ancient Greek and Byzantine medical texts. The 36-month programme, with a total budget of €1,496,750.00, is part of the HORIZON-WIDERA-2023-ACCESS02 (Twinning) framework and includes the participation of 5 Universities from four countries (Greece, Germany, Italy and Kosovo).

Past Events – Talks

• On the occasion of the publication of Professor Chrysostomos Mantzavinos's new book, *The Constitution of Science* (Cambridge University Press, 2024), an international symposium took place at the Kostis Palamas Building on June 10, 2025, with the participation of speakers from Germany, the United Kingdom, the USA, Israel, and Singapore.



- Prof. **Mantzavinos** also presented his new book at the Center for Philosophy of Science at the University of Hong Kong on September 1, 2025.
- Professor **Theodore Arabatzis** was a member of the International Program Committee for the **27th International Congress of the History of Science and Technology,** which took place in Dunedin, New Zealand, from June 29 to July 5, 2025.
- On July 1, 2025, Prof. **Arabatzis** gave a lecture (together with Dr, **Vasiliki Christopoulou**) entitled "Perspectivism meets the history of the electron" in the framework of the 27th International Congress of the History of Science and

Technology.

- Professor **Stathis Arapostathis** gave the following talks:
- "Transformation or **Obduracy?** Exploring Perceptions, Expectations, and Dilemmas in the Agricultural Sociotechnical Transition of Thessaly", Arapostathis, Vasso Karan-Stathis tzavelou, Sotiris Alexakis. International Sociology Association Conference, Session Chan-ging Foodways in the Time of Climate Change, March, Rabat, 6-11 July 2025.
- "Vulnerable pendulum: Agriculture amid Productivism, Water Scarcity and Climate Change in the region of Thessaly, Greece (1950-2025)", Yannis Fotopoulos, Sotiris Alexakis, Stathis Arapostathis. Historical Narratives of Transformation" at Aarhus University, 13-14 August 2025.
- "Agriculture in a precarious period: Climate Change, Imaginaries of Productivism and Water Abundance in Thessaly, Greece, from 1950 to 2024", Stathis Arapostathis, Yannis Fotopoulos, Sotiris Alexakis. European Society of Environmental History, Uppsala, Sweden, 18-22 August 2025.
- "Breeding Animals as Machines. Imaginaries, technopolitics and industrial meat production in Greece 1950 to the present", Stathis Arapostathis. Contested Industrialization of Food Systems in the Unequal Anthropocene: Critical Histories of Agriculture- and Food-Affiliated Industries from a Global Perspective (1945-present), University of Utrecht, 15-16 May 2025.
- "Migrant seeds and breeds as technologies of imaginary enactment in

- **Greek Agriculture, 1920-2000**", Stathis Arapostathis, SHOT Annual Meeting, Luxembourg, 9-11 October 2025.
- Assoc. Professor **Petros Bouras**-**Vallianatos** participated as a speaker in International Summer School "Ethnopharmacology and Artificial Intelligence in Drug Discovery," which place the Institute at Ethnopharmacological **Studies** & Phytotherapy of NKUA between July 14 and 18, 2025, with two talks:
- "Premodern medical texts as sources of ethnopharmacological studies: Challenges and Future Prospects"
- "From manuscripts to editions: Making use of reliable textual sources" Additionally, along with the Curators of the Benaki Museum, Dr. Mara Verykokou and Dr. Panorea Benatou, he guided the students through the Museum's Collection of Manuscripts and Medical Instruments.



Guided tour of the Benaki Museum's Manuscript Collection for the Summer School students

- Assoc. Professor **Petros Bouras-Vallianatos** gave the following talk:
- "Byzantine Hospital Recipes: Texts and Contexts", in the framework of the 27th International Congress of History of Science and Technology, which took

place in Dunedin, New Zealand, from 29 June to 5 July 2025.

- Additionally, Prof. **Bouras-Vallianatos** visited California (USA) as an invited guest of the Department of History at the University of California, Berkeley, and the Department of History and Classical Studies at San Diego State University, where he gave the following lectures:
 - September 2, 2025 (STSU):
 "Global Cures: Asian Drugs in the Ancient and Late Antique Mediterranean World"
 - September 3, 2025 (UC, Berkeley):
 "Byzantine Medicine in Light of the Global Middle Ages: Current Trends and Future Avenues"
 - September 4, 2025 (UC, Berkeley):
 "Byzantine Hospital Recipes: Texts and Contexts"
 - September 5, 2025 (UC, Berkeley):
 "Global Cures: Pharmacological Ingredients from Asia in Late and Byzantine Medical Works"



Talk by Prof. Bouras-Vallianatos at the Department of History, UC Berkeley

• Assist. Prof. Eleni Manolakaki gave a talk entitled "The Force-Content Distinction and its Relevance to Logic". in the framework of the Summer School Logic, Athens, 7-11 July 2025.

- Assoc. Professor Ioannis Katselidis gave a lecture in collaboration with Professor Stavros Drakopoulos on June 6-7, 2025, entitled "The Role of Psychology in the Non-Mainstream Tradition: George Katona and Other Dissenters," at the 25th Conference of Greek Historians of Economic Thought, held at the Department of Economics, NKUA.
- Dr. Emmanouil Protonotarios, member of the Department's Special Teaching Staff, attended the annual European Conference on Visual Perception (ECVP 2025) held on August 24-28 in the city of Mainz in Germany, where he presented research entitled "Visual **Parameters** Modulating Perceived Area Overestimation of Dot Clouds Relative to Their Convex Hull". abstract was submitted collaboration with graduate students Protogeraki Kalliopi and Maragkou, whom he supervised as part their Master's Thesis in the Interdepartmental Postgraduate Program in Cognitive Science.
- Assoc. Prof. Eleni Gemtou participated in the international conference "TABOO TRANS-GRESSION TRANSCENDENCE in Art & Science" (September 9–13, 2025, Kino Šiška, Ljubljana), which was coorganised by the Department of Sound and Image Arts of the Ionian University, Kino Šiška, and the Projekt Atol organization. Prof. Gemtou, together with **Ioannis Tsoumas** and Stella **Sophokleous**, presented the entitled: "Noise, Parasites, and Digital Coexistence: An STS Approach to Theo Triantafyllidis' Ork Haus".

- Prof. **Katerina Ierodiakonou** gave a talk on "**The Role of Light in the** *De coloribus*" in the framework of the Tartu Workshop in Ancient Philosophy, 25-26 September 2025.
- Roditsa Frangidou (PhD Candidate) gave the following talks:
- Workshop: Logic in the Visegrad countries, September 3 5, 2025, University of Ostrava, Ostrava, Czech Republic, "The Ability to Differentiate Meanings through Procedural Semantics within the Framework of Transparent Intensional Logic".
- -Polish Congress of Logic, September 22-26, 2025, Nicolaus Copernicus University, Toruń, Poland, "Incorporating Illocutionary Force Into Procedural Semantics within Transparent Intensional Logic".
- The School (Blended Intensive Programme) "Let's Prove It! Reasoning in Different Contexts", organised by **Yannis Stephanou** and **Vladimiros** Katranidis as part of the university alliance, was completed in July with great success. The school focused on the applications of logic, from philosophy to mathematics and from computer science to law. It consisted of an online part, which ran from early March to the end of June, and an inperson part, which took place in the new HPS building from July 7 to 11, 2025. Fifty-two students applied to participate in the School, of whom 34 were accepted and 26 completed it. Three of the 26 studied at the University of Athens, while the rest came from the universities of Rome Madrid (Sapienza), (Universidad Marseille Autónoma), (Aix-Marseille), Brussels (Université



Student Visit to Acropolis

libre), Bucharest, Salzburg, and Johannesburg (Witwatersrand). Some were studying for their first degree, others were doing postgraduate studies, and others were doctoral candidates. Six lectures were given in the online part of the BIP, the speakers being T. Piecha (Tübingen), C. Brinçus (Bucharest), D. Kapantaïs (Academy of Athens), K. Tsinas (University of Cyprus), A. Kakas of (University Cyprus), and Ierodiakonou (HPS). The students were divided into five groups, each of which studied a topic under the supervision of an instructor and made a related online presentation. Eleven lectures were given during the in-person event, and the speakers were M. Dumitru (Bucharest), Y. Stephanou (HPS), A. Piccolomini (Tübingen), C. d'Aragona Brinçus Carbo-Gil (Bucharest), F. (Aix-A. Cusi (Sapienza), Marseille), (HPS), V. Triantafyllou Filippou (Ioannina), E. Manolakaki (HPS), P. Cantù (Aix-Marseille), and **Dimitrakopoulos** (HPS), while the five student groups delivered another presentation each.

• 2-Day Conference "Governing Just Agrifood Transitions: Politics of Justice, Responsibility and Resilience in Sustainable Food Transitions", 29-30 September 2025, New Building HPS, NKUA. The conference was organised by the Laboratory of Science, Technology, and Innovation in Society under the direction of Prof. Stathis Arapostathis. Keynotes speakers: Teea Kortetmäki (University of Jyväskylä) and Andy Stirling (SPRU/ University of Sussex).

This event brought together scholars from Science and Technology Studies, Sustainable Transitions Studies, Responsible Research and Innovation, and Food Studies (including Food Ethics) to explore what constitutes just



Conference participants



in governance transitions toward sustainable and equitable food systems in Europe and beyond. Focusing on the ethical, political, and material dimensions of technoscientific change in agrifood sector, the workshop addressed the often-hidden injustices embedded in dominant regimes of production and consumption. Supported by the HFRI-funded project Go-JuST, the workshop aimed to foster interdisci-plinary dialogue resonated with the mission of the European Society for Agricultural and Food Ethics (EurSafe), which endorsed the event as its official interim workshop. The workshop organised with the Norwegian University of Science and Technology (NTNU) and the Institute Agricultural Economics and Sociology (AGRERI). The fifteen invited papers covered cases from three continents and represent 10 international universities and research organisations.



Group photos of the conference participants after the farewell dinner

Forthcoming Events – Talks

• The *Athens Colloquium in Ancient Philosophy* is being organised for the third year by *The Athens MA in Ancient Philosophy*, in cooperation with The

Danish Institute at Athens. The talks take place once a month, **on Thursdays at 7 pm**, at The Danish Institute, Chairefontos 14. Each talk lasts between

- 30 to 40 minutes, followed by an extensive, open, and focused critical discussion, which can last up to 60 minutes. The next talks:
- Oct. 16: Francisco Gonzalez: "Being as Truth and Life: Heidegger's 1942/43 Seminar on Aristotle, Metaphysics Θ 10".
- Nov. 27: Ioannis Papachristou: "Olympiodorus on *phantasia* as an obstacle to knowledge".
- Jan. 15: Vasia Vergouli: "Activity and movement in Aristotle's account of pleasure".
- 1st Scientific Meeting on the History of Science and Technology. The Greek **National** Committee, International Union of History and Philosophy of Science, the Department of History and Philosophy of Science (NKUA), the Institute of Historical Research (NHRF), the Research Center for the History of Modern Hellenism (Academy Athens), and the **Department of Primary Education** (NKUA) are co-organising the 1st Scientific Meeting on the History of Science and Technology. The meeting will take place on Friday, October 17 (Academy of Athens) and Saturday, October (New Building 18 HPS/NKUA) **2025**. The program is available here.
- Second year of the **Interdisciplinary** Research Seminar " $\Delta \iota \varepsilon \pi \iota \Delta \eta \mu \Upsilon \alpha$ ". The Interdisciplinary Research Seminar $\Delta \iota \varepsilon \pi \iota \Delta \eta \mu \Upsilon \alpha$ "State and public health in the shadow of epidemics (19th - 21st century): approaches from history and the research fields of STS and critical medical humanities" continues for its second year. The seminar takes place in the East Hall of the Academy of Athens Building (28 Panepistimiou St.), on one Thursday (18:00–20:00) each month, from October 2025 until May 2026. Participation is open and no prior registration is required. The seminar is conducted in the Greek language. The coordinators of the seminar **Thanasis Barlagiannis** (Research Fellow, KEINE, Academy of Athens) Katerina Vlantoni (Assistant Professor, HPS Department, NKUA). You may see the full schedule <u>here</u>.
- Professor Theodore Arabatzis (along with the Honorary Professor Kostas Gavroglu) will give a talk as an invited speaker entitled "Styles of Scientific Practice: The Importance of Scale", in the framework of the conference "Re-Visiting Historical Ontology", which will take place in San Sebastian on 23 October 2025.

News from MA Degrees of the Department

• With the completion of the selection process for new students for the academic year 2025-26, *The Athens MA in Ancient Philosophy* enters its third year of operation. The programme promotes the study of Ancient Greek Philosophy across its entire historical and thematic scope. It is the only program in Greece

(and one of very few worldwide) that focuses exclusively on Ancient Philosophy as a subject of systematic study and research.

This year, 39 applications were submitted and fifteen students were accepted; among them, the Athens MA will host graduates from the universities of Cambridge, North Carolina, Padova, and

Renmin. Our 15 new students come from ten different countries: China, the USA, the UK, Italy, Finland, Russia, India, Singapore, Venezuela, and Greece.

The Athens MA in Ancient Philosophy is based in and supported by the Department of History and Philosophy of Science and is the result of a collaboration between three major Greek universities, which have joined forces to

create a highly competitive programme: the National and Kapodistrian University of Athens, the University of Patras (Department of Philosophy), and the University of Crete (Department of Philosophy).

The programme lasts one full academic year (12 months – 75 ECTS). Tuition fees are $\[\in \]$ 3,000, and the language of instruction is English. For more information, visit <u>here</u>.

Alumni News

• Giannis Vassilopoulos completed his undergraduate studies in History and Philosophy of Science at the University of Athens in 2022. He went on to earn an MA in Philosophy with Distinction from Georgia State University, supported by

an Onassis Foundation Scholarship. Since the fall of 2025, he has been a PhD student in Philosophy at the **University of Pennsylvania**, where he holds a Benjamin Franklin Fellowship.

STS NKUA Alumni Network -- Alumni Network of the Interdepartmental Program of Graduate Studies 'Science, Technology, Society—Science and Technology Studies', Department of History and Philosophy of Science (HPS) & Department of Informatics and Telecommunications, NKUA

• While preparing for its eighth year of operation, the Interdepartmental Graduate Program of **Studies** "Science, Technology, Society - Science and Technology Studies", HPS Department of Informatics and Telecommunications, NKUA, can count on a number of 150 alumni from 4 continents and dozens of countries. With the of support the programme administration, under the responsibility of Assistant Professor Katerina Vlantoni (Alumni Faculty Advisor), the Alumni Network recently proceeded with its

organisation, coordinated by an alumna from the USA **Abigail** (Abby) **Chernila** (Alumni Coordinator) (photo). Dozens of graduates from all over Europe and the world who have graduated in the STS field and have chosen to carry out their thesis at HPS/NKUA, utilizing the Erasmus program within the framework of the Inter-European University Association on Society, Science and Technology (ESST), have also been invited to this network (indicatively: 14 graduates in the last three years). The STS NKUA Alumni Network connects

alumni from all years, aiming to continuously exchange information about events and opportunities related to STS. This information includes job openings, international and local events (e.g. conferences, workshops), partnerships, recent publications, open calls and opportunities to collaborate



Abby Chernila, the Alumni Coordinator

with other alumni and current students, as well as with faculty members. The Alumni Network also supports the recruitment of new students. Information about the STS Alumni Network here.

Inaugural STS NKUA Alumni Annual Dedicated Workshop. On 13 September 2025, the STS NKUA Alumni Network organized its inaugural annual workshop on a topic of importance, with attendance available both in person and virtually. There are already plans for future workshops on topics like the following: STS approaches to existential risks/threats, STS approaches to ΑI STS challenges, approaches Degrowth/Commons. The Inaugural (2025) STS NKUA Alumni Workshop hosted Vasilis Kostakis, Professor of Technology Governance and Sustainability at TalTech's Ragnar Nurkse Department of Innovation and Governance in Estonia, Faculty Associate at Harvard University's Berkman Klein Center for Internet and Society, and founder of the P2P Lab and both the Tzoumakers rural makerspace and the Commonen energy cooperative. The workshop run by Professor Kostakis, entitled "Beyond Techno-Solutionism: Digital Commons and Solidarity Economies for a Sustainable *Future*", was introduced as following: "Environmental degradation and global wealth inequality are critical challenges Many today. promote high-tech solutions like 'smart cities' and 'green growth' as silver bullets that enhance services, reduce carbon footprints, and minerals often sourced through questionable practices in the Global South. Yet these technologies rely on scarce metals and empower citizens. Their life-cycles consume energy, create toxicity, and involve precarious labor. We face a paradox: Can technologies that may worsen these issues truly solve our problems? This workshop explores the relationship between technology, sustainability, and global equity, focusing on alternatives like digital solidarity economies, commons-based approaches, and open cooperativism. We will examine how decentralized governance and digital commons might create more equitable technological futures that avoid extraction. We will challenge dominant narratives also while exploring how cooperative ownership models could transform our technological relationships and address contradictions in our current technoeconomic paradigm. Join us as we envision a future where technology serves humanity and our planet through democratic, sustainable, and solidaritybased infrastructures."





Photographs from the First Alumni Workshop STS NUKA (2025)

Publications of Members of the Department

• Interview by Prof. Stavros Drakopoulos entitled "Ein Gefühl der Vernachlässigung". Full text <u>here</u>.

• Articles:

- Anagnostoudi, Y. "Scorekeeping in a positive epistemic game", Synthese (2025) 206:188.
- Ασσυχίδη Μ., Γκουγκαρά E., Α., Τζωρακάκη Μαϊστοάλη Δερμιτζάκη Κ., Καλεσοπούλου «Εδώ Σκαρίμπας!» Σχεδιασμός Μουσειοσκευής για το Πολιτιστικό Κέντοο - Μουσείο - Αρχείο Γ. Πρακτικά Συνεδρίου Σκαρίμπα», 10ο Πανελλήνιο Συνέδριο Εκπαίδευση και Πολιτισμός στον 21ο αιώνα, Εθνιικό Κέντρο Έρευνας και Διάσωσης Σχολικού Υλικού, 5-6-Απριλίου 2025, τόμ. Α', Αθήνα 2025, σσ. 254 -265.
- Katselidis, I. (2025). "<u>Joan Robinson on</u> economic philosophy and methodology", The European Journal of the History of Economic Thought.
- Tzafestas. E. S. "Status-based Inequalities: Consequences and Origins", Social Simulation Conference 2025 (SSC 2025), Delft, Netherlands,

- August 2025, Springer proceedings to appear.
- Tzafestas. E. S. "Pathways for cultural evolution of war behaviours", *Proceedings of the International Conference on Behavioral, Economic, and Socio-Cultural Computing* (BESC 2025), Hong Kong, China, October 2025, Springer, appear.
- Gotsis, G., Grimani, A. (2025). "The Effect of the Global Pandemic on the Structure of Work". In: Marques, J. (ed.), The Palgrave Handbook of Change and Resilience at Work (p.p. 63–87). Palgrave Macmillan, Cham.
- Gotsis, G., Grimani, A. (2024). "Buddhist Spirituality in Economics and Management". In: Marques, J. (ed.), Encyclopedia of Diversity, Equity, Inclusion and Spirituality. Springer, Cham.

• Book reviews:

- Drakopoulos, S. (2025). Review of Peter Earl (2022), Principles of Behavioral Economics: Bringing Together Old, New and Evolutionary Approaches, Cambridge:

Cambridge University Press. Review of

Completed Doctoral Theses

• Loui, Sofia.

Title: The representation and processing of morphologically complex Greek words in the mental lexicon.

Language: Greek.

Supervisor: Prof. Athanasios Proto-

pappas.

Date of Completion: 2024.

Abstract: The representation and processing of words with internal structure—morphologically complex words—remain a central focus in global psycholinguistic research. A dominant hypothesis emerging from this research posits that words are represented and stored in memory based on their constituent morphemes (e.g., play-er, play-ing, dis-play). According to this view, morphemes are utilized in both language production (Levelt et al., 1999) and comprehension (e.g., Feldman & Andjelkovic, 1992; Marslen-Wilson et al., 1994; Sandra & Taft, 1994), in such a way that all complex words are constructed from their morphemes during production and decomposed into them during comprehension. This dissertation aimed primarily to explore this fundamental question through a series of experiments in the Greek language, with the objective of gaining a deeper understanding of the structure and function of the Greek mental lexicon. The representation of words in Greek was examined using experimental materials comprising morphologically complex words nouns and verbs-with inflectional and/or derivational morphemes.

• Tsakiri, Amalia.

Title: Levels, decomposition and mechanistic explanation in biological systems: the case of cognitive science.

Language: English.

Supervisor: Prof. Drakoulis Nikolinakos.

Date of Completion: 2024.

Abstract: Few phenomena intriguing and enigmatic as the ones that constitute mentality, and investigating them behaviors of biological organisms (humans, in this case) poses an enormous challenge for the sciences of the mind. These sciences, collectively known as cognitive science, form an umbrella that embraces the study of mental phenomena. It is in this field that the idea for the new-mechanistic model of explanation tests its limits, as it must only tame the explanatory complexity of biology but also delve deep into the mysteries of the mind. It is into these deep intellectual waters that the present dissertation descends. This inquiry targets various interconnected Can the new-mechanistic explanatory framework be extended to explain mental phenomena? How can we reconcile the diverse concepts of levels encountered in cognitive science with mechanistic levels? What role does decomposition play in explaining and mental phenomena, biological primarily as an analytical tool and also as an integral part of the mechanistic explanatory schema? Can mechanistic explanatory models incorporate the informational and representational aspects cognitive processes? Ultimately, can the gap between psychological and neurobiological approaches to cognition be bridged with the aid of the mechanistic explanatory framework? The research unfolds across various stages, progressing from the general to the specific. This gradual specialization is reflected in the two parts of the study, the sequence of chapters, and their internal structure. The research methodologies employed to address these questions approach the subject matter from multiple angles. The study begins with conceptual mapping and analysis of the two fundamental components that constitute the research axis of the dissertation. These are the concepts of levels and decomposition, which are examined in the first two chapters. The subsequent two chapters present a comparative analysis of two explanatory models: Carl Gillett's (2016) compositional explanations and Carl Craver's (2007) new-mechanistic explanatory framework, which focuses on neuroscience, with an emphasis on constitutive explanations. These models are closely related, as they both the role of recursive emphasize decomposition leading to a hierarchy of multiple explanatory levels. These two chapters are framed by two extensive case studies. The first, presented in the third chapter, concerns compositional explanations of the bending mechanism of the knee and the physiology of The muscle contraction. second, detailed in the fourth chapter, explores constitutive mechanistic the of explanation neurobiological mechanisms of spatial memory development in mice. While the first part lays the groundwork for mechani-

stic explanation by initially examining levels, decomposition, and biological complexity, the second part delves into the deep waters of applying mechanistic explanations to mental phenomena. It begins by analyzing their distinctive character, which stems from information processing and intentionality capacity for internal representation of the world and the attribution of meaning to it. A comparative study is conducted to investigate the compatibility of levels used in cognitive science explanations with mechanistic explanatory levels, using visual recognition of an apple as a case study. The fifth chapter concludes with a negative assessment regarding levels, constituting the first major challenge the to applicability mechanistic explanation mental to phenomena. The final chapter presents a comparative and critical discussion on the possibility of unifying psychological and mechanistic models into a common explanatory framework, highlighting the problems that arise in such an endeavor. The concept of decomposition is then revisited as an analytical tool for constructing psychological explanatory models, examined in the case of the internal visual representation of a horse. Finally, it highlights the issues that emerge when applying this to physical (neurobiological) mental and informational and (concerning representational content) entities. The chapter and the dissertation conclude with a proposal for reconciliation psychological between and neurobiological explanatory models. In this proposal, psychological models play central role, with mechanistic explanations subsumed within them as a

hierarchy of explanatory mechanisms extending across many lower levels. Each hierarchy of mechanisms implements a specific explanatory level of the psychological model, without a one-to-one correspondence between neurological psychological and elements that recursively extends to all lower levels. Concluding the study, while mechanistic explanations offer valuable insights for understanding

mental phenomena, they require significant modifications to fully capture their unique characteristics. The proposed framework suggests a way to integrate psychological neurobiological approaches to cognition without reductionism, adopting a form of interpretive pluralism that respects the autonomy of different levels and aspects of explanation while illuminating their interconnections.

Department of History and Philosophy of Science, University Campus, Ano Ilisia, 15771, Athens, Greece. **Tel.** +30-2107275586. **Website:** https://en.phs.uoa.gr/

Head of Department: Professor Anthony Hatzimoysis

This **Newsletter** was prepared by Assoc. Professor Petros Bouras-Vallianatos

The **Newsletter's website** is maintained by Professor Christos Papatheodorou

To register, please email to pbourasval@phs.uoa.gr

The **next Newsletter** is scheduled to be published in **early December 2025.** Please send your news to <u>pbourasval@phs.uoa.gr</u> by 30 November 2025.