

Philosophy and Science Meet at Humboldt University Berlin

Giouli Korobili Gonzalo Gamarra Jordan Juliane Küppers Benjamin Wilck

Scientia

PHILOSOPHY AND SCIENCE MEET AT HUMBOLDT UNIVERSITY BERLIN

A new program at Humboldt University Berlin encourages academic discussion about Greek, Roman and Arabic models of knowledge and the intersection of philosophy and science. Georgia-Maria (Giouli) Korobili, Benjamin Wilck, Gonzalo Gamarra Jordan and Juliane Küppers are some of the brilliant doctoral students taking part in the program, which was officially established in October 2014.

Philosophy and Science today are two very distinct academic disciplines, but they are founded upon a set of the same fundamental ideas developed in ancient Greece, Rome and later in the Arabic world. In fact, many established scientific theories were developed from philosophical principles introduced by philosophers from the most prominent ancient civilisations. Examples include the concept of mind and body duality, or theories on the force of attraction between atoms.

Academic settings that encourage multidisciplinary research and discussion are still somewhat rare, but can be extremely valuable: they can help to expand our knowledge and understanding of fundamental ideas, by encouraging scholars to consider new perspectives that link notions from different disciplines together.

The Philosophy, Science and the Sciences doctoral program at Humboldt University does exactly this – bringing together philosophers, classicists, Arabists and science historians to discuss their research in different disciplines, and prompting them to develop new perspectives on how these might be connected. Scholars in the program contribute to the current understanding of the relationship between scientific concepts and philosophical ideas developed in the Roman, Greek and Arab worlds.

The trainee research group is encouraged to explore the connections or differences between different philosophical and scientific theories of the past. This is done through sharing ideas and discussing possible interactions between different methods for finding knowledge, as well as between different disciplinary fields (e.g. philosophy, mathematics, medicine, astronomy, etc.) or ideas developed in different cultural contexts (e.g. Greek, Roman, Arabic). For instance, ideas in astronomy could be analysed in relation to the philosophical notions of the ancient philosopher Aristotle, who was correct to argue that the Earth was spherical, while his theory that everything in the Universe revolved around Earth turned out to be false.

There are numerous possible subjects to explore, as many of the scientific disciplines we know today were developed in times of vital occupation with ancient philosophical principles and spirited debates on how to apply and advance them, such as during the height of Arabic philosophy or in the early modern European period.

The doctoral program, led by Professors Jonathan Beere and Philip van der Eijk, started in October 2014 and is funded by Deutsche Forschungsgemeinschaft (DFG). Teaching staff includes professors at Humboldt University and the Free University Berlin, as well as distinguished international scholars who travel to Berlin. New doctoral students are accepted into the program every year and from October 2017, additional funding by the German Academic Exchange Service and the Einstein Foundation will offer further scholarships for the course. The program is integrated within the Berlin Graduate School of Ancient Studies (BerGSAS).

Those who become part of the training group are automatically part of an international network of partner universities, where doctoral students can spend a semester abroad. These include the Classics and Philosophy departments at Princeton, Harvard, McGill University, New York University, the University of Chicago, Leuven

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and Cambridge. Conversely, students from partner universities can take part in the activities in Berlin and attend a broad variety of courses, reading groups, tutorials, workshops or short courses, all of which are taught in English. Dissertations are written in both German and English, covering a wide range of philosophical or philological topics. Every doctoral project focuses on a specific area of dialogue between philosophy and the sciences and students are encouraged to communicate with their teachers and each other in order to situate their work within a larger framework.

Giouli Korobili, Benjamin Wilck, Gonzalo Gamarra Jordan and Juliane Küppers are four students who are currently taking part in the program. Their dissertation projects explore different aspects of philosophy and science, ranging from ancient Greek philosophical strategies for refuting or establishing mathematical principles to early modern theories on particle physics.





The Charité building, CREDIT: Uta Kornmeier

Giouli Korobili: Aristotle's Work on Youth, Old Age and Death

Giouli Korobili's research project explores the ideas discussed by Aristotle in the last part of the *Parva Naturalia*, entitled *On Youth and Old Age, on Life and Death, on Respiration.* Her thesis aims to provide a new English translation and commentary of these texts, while also critically analysing the issues discussed within them and identifying potential medical and earlier philosophical influences on Aristotle's thought.

A considerable number of scholars have previously questioned the unity of the work, putting forward the claim that the first six chapters so clearly comprise a self-contained piece of work (i.e. *On Youth and Old Age, on Life and Death*) that they must be treated as separate or in isolation from the remaining 21 chapters (i.e. *On Respiration*). In her doctoral research, Korobili argues the opposite, which is that chapters 1–6 pave the way for the rest of the work in that they seek to establish the basic principle that runs throughout the whole treatise, namely, that the soul lies in the heart, in the middle of the body (cardiocentrism).

She argues that the whole treatise comprises 27 chapters, in which Aristotle places particular emphasis on the localisation of the soul within the living body, the critical factors ensuring life, and the importance of the processes of nutrition and respiration, as well as on such topics as the proper way of pursuing inquiry in natural science or the boundaries between natural philosophy and medicine. In the analysis section of her thesis, Korobili seeks to establish the relevance of the ideas put forth in these texts to earlier and contemporary biological and medical theories, such as those constructed by Presocratic philosophers, Plato and Hippocratic writers.

While working on her doctorate, Korobili was offered the opportunity to become part of an outreach project visualising ancient Greek medical and philosophical ideas about body, soul, and their interaction. The aim of the project, directed by Professors Philip van der Eijk and Thomas Schnalke, was to hold an exhibition open to the public in the Berlin Medical History Museum of the Charité (Berlin's Medical School) in the central room housing the 19th century physician and pathologist Rudolf Virchow's specimen collection. The exhibition was entitled 'The Soul is an Octopus. Ancient Ideas of Life and the Body' and was accompanied by an illustrated catalogue (to which Korobili contributed) guiding the audience through the fascinating world of ancient anatomy, physiology and medicine.

As part of her work within the program, Korobili and Dr Roberto Lo Presti organised an international conference 'Nutrition and the Nutritive Soul in Aristotle and Aristotelianism' at Humboldt University Berlin. The 3-day conference brought together established scholars and graduate students working on philosophy and science from antiquity until early modern times, exploring the way in which the most basic type of soul operates in the body. The proceedings of this conference are to be published by De Gruyter in the series 'Topics in ancient philosophy'.

Juliane Küppers: Ancient Atomic Theories and the Development of Particle Physics During the Early Enlightenment

Juliane Küppers recently began her third doctoral semester and is working on a research project analysing 17th century works published in Latin that discuss particle physics and atomic theories.

In particular, she will focus on the writings of the French philosopher Pierre Gassendi, mainly his Philosophiae Epicuri Syntagma and his Syntagma philosophicum, who in a time when the idea of atoms as the indivisible 'building blocks' of matter was not widely accepted - advanced ancient atomic theories and refined them. In particular, his concept of atoms banding together through constant movement, basically tiny vibrations, to form matter was an influential notion that would be adapted into later theories on the force of attraction. However, most of his writings have not yet been translated or systematically commented on, and Küppers believes that further analysis of his views would prove to be a valuable contribution to the field.

In her work, Küppers will also show where certain atomist theories originated and refer back to the extant fragments from the writings of the hellenistic philosopher Epicurus and the 1st century BC poem *De rerum natura* by the Roman Lucretius. These texts outline basic ideas about the fundamental elements of matter, proposing that atoms are the particles that make up all things in the Universe.

Küppers is currently spending the autumn term 2017 as a Visiting Fellow at the Harvard GSAS Department of the Classics. At Harvard, she plans to explore a number of aspects of her project, including computational methods of analysing natural philosophical and scientific treatises.

With my dissertation, I hope to not only add to the reception history of Lucretius' *De rerum natura* in my original field of study. I also want to contribute to interdisciplinary research on physics during the early Enlightenment with the expertise of a Classical Philologist,' she explains.



The Flammarion Engraving



Benjamin Wilck: Philosophical Strategies to Prove or Disprove Mathematical Principles

Benjamin Wilck's research project examines ancient Greek philosophical methods as ways to prove or disprove mathematical principles. He looks in particular at Aristotelian dialectic. 'This dialectical method is an ability, rather than a theory – it provides general, topic-neutral, logical means to put a given scientific principle to the test,' he says. 'Since the dialectician must not be committed to any specific scientific or philosophical beliefs, no scientific knowledge is required in applying such dialectical tests.'

Wilck's doctoral research aims to shed light on the extent to which Aristotelian dialectic is applicable to the actual scientific practice. 'The principles of a science cannot themselves be established or refuted by means of a scientific proof,' explains Wilck. 'Rather, a different method is needed, and finding such a method has occupied philosophers since Plato and Aristotle.' His research focuses on the question whether or not philosophical dialectic manages to undermine the rigorous proofs of Euclid's Elements. 'Currently, I am working out an axiomatic reconstruction of Euclid's number theory to show how precisely Euclid makes use of his definitions of odd and even in mathematical proof,' says Wilck. 'For, these are among the definitions that Aristotle dialectically refutes.' This will be the core of his doctoral dissertation, which will explore the scope and limits of Aristotelian dialectic concerning mathematical practice.

Wilck aims to complete his doctoral research in April 2018. After that, he plans to publish further research on related topics, including a paper on the ancient sceptic Sextus Empiricus, which will examine the question of the applicability of philosophical scepticism to scientific principles.

Gonzalo Gamarra Jordan: The contest between Aristotle and Syrianus on Plato's Ideas

Gonzalo Gamarra Jordan's doctoral dissertation is at the centre of an important conflict between the Aristotelians and the Platonists of antiquity regarding mathematical objects. 'In the last two books of his *Metaphysics*, Aristotle presents a series of criticisms of important Platonic ideas,' explains Gamarra Jordan. 'These include the Platonic Forms and the intermediate ontological status of mathematical objects, and the idea that these underlie and structure the whole Universe, that is to say, that they are the principles of all things.'

The main text of Gamarra Jordan's research is the *Commentary on Metaphysics M & N* by Syrianus, a Neo-Platonist philosopher who was head of the Athenian Platonic Academy during the 5th century CE. 'Part of my interest in Syrianus lies in the fact that he was the first philosopher to explicitly tackle Aristotle's criticisms head-on,' says Gamarra Jordan. 'Another reason is that, in the act of defending Platonism, Syrianus presents sophisticated accounts and arguments for the Platonic ideas in question.'

'In the dialogue between Aristotle and Syrianus, one of the prominent issues at stake is the status of mathematical objects,' he adds. Put simply, do mathematical objects have an independent existence on their own right (Platonism), or are they only by-products of our minds (Aristotelianism)? 'In other words, when I look at my iPhone, is the rectangle that I "perceive" produced by some capacity of my mind or is my mind being informed by a form of a rectangle which exists independently of my thinking? This is one of the points of contention between these two ways of thinking.'

Gamarra Jordan sees the aim of his project as twofold. The first aim is to elucidate the dialogue between Syrianus and Aristotle, and the second is to present a systematic account of Syrianus' metaphysical system, that is, to explain the basic structure of reality according to Syrianus' extant works.

Meet the researchers



Giouli Korobili

Giouli Korobili is a PhD candidate specialising in Classical Philology at Humboldt University, Berlin. Her work so far has been centred on classical philosophy and languages, with a particular focus on Latin and Ancient Greek languages, as well as the views of Greek philosopher Aristotle. Her research interests, however, extend to ancient Greek and Roman medicine, ancient and modern rhetoric, metapoetics, botany and iatromechanics. Her latest publications include 'Nutrition, Life and Health of the Ensouled Body' in U. Kornmeier (ed.) *The Soul is an Octopus. Ancient Ideas of Life* and the Body, Berlin 2016, pp. 68–75, 'What do people call death? Aristotle's scientific approach to a natural phenomenon' (forthcoming by Medicina&Storia) and 'Aristotle on the role of heat in plant life' (forthcoming by De Gruyter). **E:** gkorobili@hotmail.com



Gonzalo Gamarra Jordan

Gonzalo Gamarra Jordan is a PhD candidate in Philosophy at Humboldt University in Berlin. His research interests include ancient Greek philosophy and ancient Greek mathematics. Outside of ancient philosophy, he has a strong academic interest in Philosophy of Mathematics (esp., Leibniz, Berkeley, Husserl, and Wittgenstein), Kierkegaard, and Ancient Chinese Political Philosophy. Originally from Bolivia, before moving to Berlin with a Fellowship from the Deutsche Forschungsgemeinschaft, Gamarra Jordan graduated from St. John's College NM, where he studied the Great Books of both the Western and the Eastern traditions. **E:** gonzalo.gamarra.jordan@gmail.com



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Juliane Küppers

Juliane Küppers is a PhD student in Classical Philology at the Free University Berlin. Her fields of interest include philology, history of science and ancient philosophy. Küppers' current work researches the ideas of 17th century French philosopher Pierre Gassendi in his Latin language work *Philosophiae Epicuri Syntagma*. She was awarded a scholarship from the Deutsche Forschungsgemeinschaft to conduct her research. In the past, Küppers worked as a part-time editor for the press office of the Freie Universität in Berlin and published articles on scientific research projects in university publications, for example in the supplement to the German newspaper 'Der Tagesspiegel'. **E:** juliane.kueppers@fu-berlin.de



Benjamin Wilck

Benjamin Wilck is completing a PhD in Philosophy at Humboldt University in Berlin. His research interests are rooted in ancient philosophy on the one hand and formal logic and theory of science on the other hand. His current research aims to critically examine the use of philosophical methods such as Aristotelian dialectic and Pyrrhonian scepticism to reject or support scientific principles, particularly mathematical definitions. Throughout his academic training, Wilck received a number of grants and awards, the latest being a scholarship from the Deutsche Forschungsgemeinschaft, for the Philosophy, Science and the Sciences program at Humboldt University. **E:** benjamin.wilck3@gmail.com

