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Review 2022 and Structure of the KLI



*„Am KLI erleben wir eine faszinierende Vertiefung der
Einsicht in die Nicht-Separierbarkeit der Evolution von
Erkenntnis und der Evolution von Humanität.“*

*At the KLI we experience a fascinating deepening of the
insight into the non-separability of the evolution of
knowledge and the evolution of humanity.*

*Johann Götschl,
University of Graz*

1.1 The Year in Review

The beginning of 2022 was once more hampered by Covid restrictions, but conditions improved during the course of the year, and the KLI was able to resume a nearly normal pattern of activity. What remained from the pandemic was the hybrid format of our colloquia series, which has the advantage of reaching out to a much wider audience than our traditional in-person events. But institute life became busy again and productivity soared, as documented by the present report.

Despite these positive developments, 2022 marks a sad turning point in the institute's history due to the passing of its principal sponsor, Traudl Engelhorn-Vechiatto, in September last year. Traudl will be remembered as an exceptional human being. Amidst her multiple philanthropic activities, she took a vivid interest in the KLI's development over the past three decades. This was not confined to distant observation.



Rather she participated in person in the assemblies and festivities of the KLI up until the age of 95. At the same time, through her presence, she instilled a moral compass in the members of the KLI community and made sure that the foundational idea of the institute as an open-minded, international, interdisciplinary meeting place of people and ideas in the fields of evolution and cognition research was observed. Whenever possible, she enjoyed the personal exchange of thoughts with the staff and fellows of the KLI. Her immensely positive and generous attitude towards all new developments constituted a major part of the success of the institute. In addition, she continuously reminded us of the central role of cultural activity as an essential part of the scientific enterprise, which she often supported by invitations to unforgettable musical events.

Traudl and her husband Peter will be remembered for their vision of creating a unique scientific institution that can enjoy the freedoms of independent thought, which is so fundamental for scientific enquiry and has become so rare in the economized world of today's universities. We will be forever grateful for their farsightedness and the immense space of opportunities they have created for all of us.

Gerd B. Müller
President

1.2 The KLI



- 4 The KLI is an international center for theoretical studies in the life sciences. The institute commits itself to the formulation, analysis, and integration of biological theories as well as the investigation of their scientific and cultural consequences. The thematic focus is on evolutionary biology, developmental biology, sustainability science, and cognition. The KLI supports interdisciplinary research projects in these areas that aim at generating models of living systems or meta-theoretical constructions of historical, philosophical, or cultural aspects of biological theories. Research at the KLI is supported by fellowships in different categories; granting decisions are based on international peer review.

The KLI also pursues its objectives by organizing international workshops, summer schools, and colloquia, and by publishing a scientific journal and a book series.

1.3 Organization of the KLI

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Scientific Projects



The KLI offers different types of fellowships for students, post-docs, and visiting scholars in the area of theoretical biology for a period of a few weeks up to two years. All project applications are subjected to an international review process.

2.1 Applications

In 2022, the KLI received a total of 129 applications for fellowships in residence, 12 of these were granted for 2022 or 2023. In addition, 7 visiting fellowships were granted for visiting scholars who stayed at the KLI in 2022.

	applied	granted
Writing-Up Fellowships	106	7
Postdoctoral Fellowships & Senior Fellowships	23	5

2.2 Writing-Up Fellowships

Alejandro FÁBREGAS-TEJEDA

(October 2022 – April 2023)

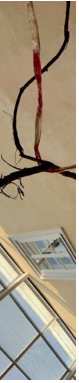


Alejandro Fábregas Tejada is a Philosophy PhD student at Ruhr-University Bochum under the DFG-Emmy Noether Research Group "The Return of the Organism in the Biosciences: Theoretical, Historical, and Social Dimensions." Recently, he has been awarded a KLI Writing-Up fellowship to complete his PhD thesis.

Re-appraising the Organism-Environment Relationship

The organism-environment relationship plays a central role in how different theories and scientific practices of the life sciences are structured and conducted. However, understanding how this relationship has been construed remains an open problem that has not been sufficiently examined by historians and philosophers of science. In this project, I seek to explore what kind of relationship is instantiated when 'organism' and 'environment' are considered *relata*. If both are said to stand in a relation of

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reciprocity, what is entailed by this claim? Is this relationship wholly symmetrical or are there some particular characteristics of these relationships which break the symmetry of the pairing? I assess different understandings of organism-environment reciprocity in contemporary and historical debates across the life sciences: in particular, I focus on ontological co-constitution, mutual structural fitting, concomitant reaction, and reciprocal causation. In addition, I peruse what separates an organism from its environment (if anything) and what constitutes the foundational asymmetries of this relationship. I contend that only the former relatum (i.e., an organism), though deeply embedded and causally affected by its surroundings throughout its ontogeny, is a self-individuating entity and a bounded locus of causation (i.e., an agent) which performs goal-directed actions and exhibits intrinsic normativity.



David HARRISON

(October 2022 – March 2023)

David Harrison is a Research Assistant at the LCFI and Templeton World Charity Foundation. He specifically works on 'The Major Transitions in the Evolution of Cognition' project, which is dedicated to understanding the emergence of complex minds in terms of a set of 'major transitions' in the kinds of information processing systems that emerged during evolutionary history. Additionally, David is a 3rd year PhD student in the History and Philosophy of Science Department at the University of Cambridge. His research addresses a cluster of intersectional issues based in the philosophy of biology, cognitive science, and artificial intelligence. His PhD project focuses specifically on 'biogenic' accounts of cognition, which sees embodiment, affectivity, valence, and materiality as the context and lens through which the evolution of cognition, mind, and ultimately consciousness should be understood. Before Cambridge, David completed studies at King's College London and the University of Edinburgh.

Materiality and Mindedness: The Biogenic Approach to Mind and Life

My research addresses several issues that intersect philosophy, Artificial Intelligence [AI], and biology—with a specific interest of mine turning around the blue-sky goal of creating Artificial General Intelligence [AGI] within an alternative medium – such as a digital computer or a synthetic robot. Simply put, the goal of exploring cognition and mind through the lens of embodiment and valence is to explore ways in which robust forms of cognition (the domain general and generalisability in the ‘G’ of AGI) relates intimately with the possibility of risk-to-self to an agent. In other words, if cognition intrinsically involves meaningful, goal-directed engagement with the world, then this engagement is heavily saturated with possibilities for the agent to maintain itself and adapt to incoming information. One promising starting point for understanding this is the biological basis of minded creatures: from sophisticated animals with complex nervous systems like octopi and humans to lower or, more properly, ‘basal’ organisms such as nematodes and even bacteria and slime moulds—a perspective that has been explored extensively under the heading of the ‘biogenic account’ of cognition (Levin 2019, 2020; Lyon et al. 2021). This account places a premium on the vulnerable, heavily embodied, and metabolic dimensions of agency and goal-directedness as the basis from which we should understand the origins of mindedness in evolutionary history. As Peter Godfrey-Smith has remarked in the context of computers, “a collection of ands and if-thens [the Boolean logic of discrete maths underpinning classical computers] with no metabolic point to them would be a different sort of thing” (2016: 490). It then attempts to generalise this to a broader theory of cognition and its physiological basis.

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Marina KNICKEL

(October 2021 – April 2022)

Marina Knickel is a PhD student and junior researcher at the Department of Agriculture, Food and Environment of the University of Pisa. During her PhD she has been a guest researcher at Wageningen University and Baltic Studies Centre working in two projects: Horizon 2020 project ROBUST on rural-urban relations and Interreg project Food Pro·tec·ts in the Dutch-German cross-border region Euregio Rhein-Waal. In ROBUST, she has led a task on monitoring and evaluation of joint learning processes in 11 Living Labs (research-practice partner teams). Her research interests include co-learning processes in trans-disciplinary research around agri-food and rural-urban issues, science-policy-practice collaboration, and functioning of the Living Lab approach in multi-actor research projects.

Capacity to Co-Learn and Adapt in Transformation-Oriented Multi-Actor Research

The unique potential of my research lies in elucidating learning trajectories and adaptation strategies in eleven Living Labs, and in combining longitudinal qualitative and quantitative data with in-depth case study data. Based on this I will be able to contribute to the debates on the role of science in social-ecological transformations, and the design and management of TD research.

During my stay with the KLI, I am planning to finalise my 4th PhD article and compile the PhD framework document. More specifically, I want to enhance the theoretical grounding of the empirical evidence that I gathered in eleven Living Labs and feed my findings back into TD theory building (epistemics and methodology) in sustainability science.

In further analysis of my empirical dataset at the KLI, I plan to still experiment with different entry points, such as sustainability science, science and technology studies, cognitive science, behavioural sciences, cultural studies and philosophy.

The theoretical contribution my KLI project will make is related to learning and its connection with reflexivity. My aim is to capture change, co-learning and adaptation over time, and arrive at a more differentiated picture of the factors affecting TD collaboration.

Lauren Marie LAMBERT

(October 2022 – April 2023)



Motivated by the desire to transcend political aporia – in which communities feel they must choose between two bad choices – with creative solutions the biggest driving force in her work and life. At ASU Lauren seeks to design research at the intersection of environmental policy and nature / society studies, to investigate how political decision-making takes place across different scales within complex global systems in support of social-ecological thriving in urban environments. To better understand the socio-economic factors underlying resilience, she investigates how people’s capacity to envision their available responses to climate change affects institutional decision-making in urban policy and planning. Current focus includes game theory, decision making, natural resource economics and complex adaptive system science. Lauren is an avid yogi and hiker with a love for travel and dark roast coffee.

Cultivating Coherence in Sustainability: Social, Futures, and Ecological Empathy

My work at KLI will constitute a final synthesis across the three studies of my dissertation. From the perspective constructionism, I will articulate the significance of cognitive bias in limiting coherence across social groups, time, and species. I will situate practice (Ortner 1984; Bourdieu 1977) and imagination at the theoretical core of my work on enabling human collaborative potential (Anderson 1991; Harari 2014). Then, I will articulate

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how cognitive biases limit imaginative potential and connection across difference in decision making environments in ways that stifle collaboration for sustainability. Expanding from the history of the concept of empathy (Wispé 1987), which was born among the aesthetics, I will move from the historical and evolutionary perspective of intra-group empathy (Waal 2009) toward a perspective of inter-group social (E. A. Segal 2011), inter-generational futures and inter-species ecological empathy. In making this move, my synthesis work at KLI will retheorize empathy as foundational to circumventing cognitive bias and increasing coherence between people, time horizons, and species, in the Anthropocene.



Rongkun LIU

(September 2021 – February 2022)

Rongkun Liu is a PhD candidate in environmental social sciences at The Ohio State University. His research encompasses knowledge engagement, risk and resilience, and coupled human and natural systems in mountain environments, particularly the Himalayas. Over the past four years, he has been working with the International Centre for Integrated Mountain Development (ICIMOD) for his field research in Nepal and China. Rongkun holds a Bachelor's Degree in international relations from Peking University in China and graduated from the American University in Washington, D.C. with a Master's Degree in global environmental policy concentrating on environmental economic policies and international environmental cooperation. He has been awarded a KLI writing-up fellowship to complete his PhD dissertation.

Citizen-Powered Knowledge Hybridization: Producing Situated Resilience for Mountain Communities

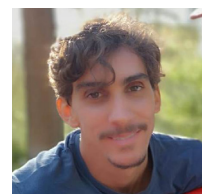
My KLI project will focus on three manuscripts targeted for journal publication. In the first two, tentatively entitled "Knowledge, Knowledge Engagement, and Community

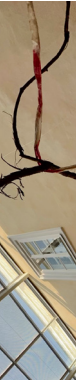
Resilience in Complex Socio-ecological Systems,” and “Political Economy and Ecology of Resilience in Mountain Farming Communities: Making Decisions for or against Changes in the Arun Valley, Nepal,” I aim to challenge, critique and refine the theoretical basis of my research and seek to inform a truly engaged environmental anthropology from theories into actions at the science/society interface. The perspective of situatedness in resilience, or situated resilience, as a result of knowledge hybridization through situated learning will be probed through a case study of mountain communities in the Arun Valley, Nepal, based on my year-long environmental social scientific study of the valley as a designated socio-ecological system. The third manuscript, tentatively entitled “Citizen-powered Knowledge Hybridization: Outcomes, Potentials, and Reflections for Community Resilience Building,” will examine the degree to which hybrid knowledge is made possible and the ways in which this process of knowledge hybridization works to increase community resilience. The analysis will be based on the results of a quasinatural experiment that employs citizen-powered techniques in co-producing resilience-relevant knowledge endorsed by both professional scientists and local knowledge holders.

Vitor MACIEL RENCK

(September 2021 – February 2022)

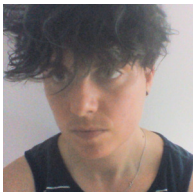
Vitor Renck is a PhD candidate in ecology at the Federal University of Bahia, Brazil. He is also a guest researcher at Wageningen University & Research and an external member of the GEOS project. His research focuses on ethnobiology and ethnotaxonomy of an artisanal fishing community in the Northeast coast of Brazil. He uses a transdisciplinary research approach in order to comprehend the prospects and limits of integration between the traditional and academic ecological knowledge. His research interests include ethnobiology, human ecology, philosophy of knowledge integration, stakeholder inclusion, and agroecology.





Can Knowledge Integration Help in Biodiversity Conservation? A Case Study in a Brazilian Fishing Community

There are innumerable examples from the literature on how knowledge integration can contribute to biodiversity conservation worldwide (e.g., Huntington 2000; Gilchrist et al. 2005; Gagnon & Berteaux 2009). Not only have we found that to be true in Siribinha, an artisanal fishing community in the Northeast coast of Brazil, but also a potential of improvement of environmental policies. By applying the partial overlaps framework, we discuss some of the Brazilian legislations to protect marine fauna through the eyes of the traditional fishers, particularly regarding closed fishing seasons, which are developed in Brazil by technicians and by researchers, without taking traditional knowledge into account. Through semi-structured interviews with traditional experts, we aimed to analyze their perception on the closed fishing seasons set on their region. We found an exact overlap between traditional and scientific knowledge on the reproductive period of the mangrove crab (*Ucides cordatus*), but a contradiction on the reproductive period of two snook species (*Centropomus undecimalis* and *Centropomus parallelus*). This result shows how knowledge integration not only enables to improve conservation management practices and policy making, but can also play an empowering role to traditional communities and indigenous peoples, contributing to their self-determination.



Ely MERMANS

(October 2021 – April 2022)

Ely Mermans is a PhD candidate in philosophy at the Université de Montréal, Quebec, and at Université de Paris 1 Panthéon-Sorbonne, France. He is a student member of the Centre interuniversitaire de recherche sur la science et la technologie (CIRST, Montreal, Quebec) and of the Institut d'histoire et de philosophie des sciences et des techniques (IHPST, Paris, France). Since

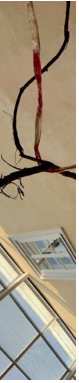
2015, they also have been actively involved in the Research Group in Environmental and Animal Ethics (GRÉEA, Quebec). His PhD research project questions the relationships between the keystone species concept, as developed in the Western ecological and conservation sciences, and Aldo Leopold-based ecocentric ethics. Their research interests are philosophy of ecology and of conservation biology, feminist philosophy of science, environmental ethics, and ecofeminism.

The Role of Non-Epistemic, Ethical Values in the Keystone Species Debate

In the Western ecological and conservation sciences, keystone species might be generally defined as biological species whose removal from the ecological community they are part of is likely to produce radical changes within and on that community (e.g., changes in species composition, diversity or interactions, changes in the community's structure and stability conditions, change in the community's external aspects, etc.). North-American examples of keystone species I am interested may include sea stars (*Pisaster ochraceus*), sea otters (*Enhydra lutris*), and gray wolves (*Canis lupus*) – i.e., keystone predatory species. Despite the fact that scientists and conservationists have approached keystone species in various ways, the disappearance of the latter has often been negatively valued. In the contrary, changes associated with keystone species addition have been positively so.

My KLI research project questions the nature and legitimacy of the aims and values which have been involved in the evolution of the keystone species concept, and of the resultant evaluative assessments of keystone species, between the 1960's and the beginning of the 2000's in the ecological and conservation sciences. I first show that while there might have been a general trend toward the positive valuation of keystone species, neither the latter nor the ways keystone species have been conceptualized through this period involved the same epistemic and non-epistemic values and aims. Yet, following feminist philosophers of science, I argue that non-epistemic values and aims, in particular ethical values

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and conservation aims, are no more peripheral to the practices of more knowledge-oriented research communities (e.g., community ecology) than they are to more action-oriented research communities (e.g., conservation biology). I henceforth suggest a theoretical, philosophical-based approach to assess the way ethical arguments can be involved in scientific discussions with regards to concept uses, variations, and evolution within and through disciplines.



Afika NJWAXU

(October 2021 – March 2022)

Afika Njwaxu is currently a PhD student at the Department of Environmental Science, Rhodes University. Afika's interests lie within sustainability sciences with a passion for use of natural resources, rural livelihoods, and forest-dependent communities. Her past projects include the importance of community engagement, the use of non-timber forests products by coastal communities in the Wild Coast of South Africa and forest regeneration on agricultural abandoned land. Afika is currently writing up her PhD project titled "Assessing cultural keystone species in the Wild Coast, South Africa" through a fellowship at the KLI.

Assessing the Prevalence of Cultural Keystone Species in the Wild Coast, South Africa

Traditional Xhosa customs and religious rites form a huge part of the identity of Xhosa people. This includes ancestors which are members of a clan that have passed on and serve as a protection board for each family. Although, Xhosa people have been engaging in these practices for decades, it is not uncommon that they abandon cultural rites for churches once they convert to Christianity. The impact of western Christianity on African traditions is an old studied anthropological problem. Therefore, an examination of the role of religion in changing

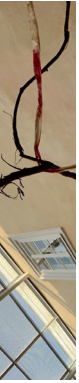
or suppressing views, acceptance and use of culturally important species was carried out. This was a very tense research to conduct with some people afraid to tell their truth in fear of judgement from fellow church goers and villagers. Methods included observation, participation, and unstructured interviews. The study was conducted in two coastal, rural villages along the Wild Coast. The sites are KwaNoqhekwana in Port St. Johns and Kie Farm in Centane, in the Eastern Cape of South Africa. This questioned yield a mix of results; with some people partaking in both cultural and Christian activities while some choose a side. Keystone species have revealed new links to the erosion of biocultural diversity which will help to devise new solutions.

Jonatan PALMBLAD

(October 2022 – April 2023)

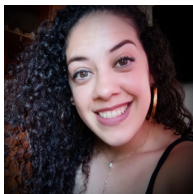


Jonatan Palmblad is a cross-disciplinary scholar primarily focusing on the workings of human–environment interaction, and the role that psychology and technology play therein. He is a PhD candidate in Environmental Humanities affiliated with the Rachel Carson Center for Environment & Society, LMU Munich, and is currently a writing-up fellow at the KLI. In his dissertation, Jonatan looks at the public intellectual and self-proclaimed generalist Lewis Mumford (1895–1990), who early on engaged with the problems later framed as the Anthropocene, using him as a prism to understand present and future issues from the standpoint of the past. Jonatan’s interdisciplinarity encompasses, but is not limited to, philosophy, history of ideas, history of technology, human ecology, ecocriticism, and environmental psychology. He has a B.A. in Liberal Arts and an M.A. in History of Science and Ideas from the University of Gothenburg, Sweden.



Synthesis and Sustainability: A Historical Approach to the Ecological Crisis

The purpose of this project is to make my historico-philosophical dissertation relevant in today's increasingly important debate on sustainability. At the same time, this is where I aim at inserting my own voice. My contribution to the scholarship on Lewis Mumford is already clear: I have outlined the philosophy behind his works, a topic that has previously only been touched upon but never fully grasped. From the very start, however, I have had the aim of going beyond the research of a single human being in history by contributing to the research on the present course of human development; at the KLI, I will have an optimal opportunity to make my historical research useful and applicable in this context. Supported by Mumford's evolutionary ideas, cognition and knowledge were paramount features of his philosophy on human-environment interaction. His contention that we must understand technology as a cultural-cognitive phenomenon—and reconceive it—if we are to achieve what is now called sustainability deserves to be considered, but not without reservation and scrutiny. The research that I have previously conducted sheds light on the present from the past; my research at the KLI will illuminate the past from the scientific standpoint of the present.



Ilvanna SALAS LEÓN

(October 2022 – April 2023)

Ilvanna Salas León is a passionate scientist with interdisciplinary interests. Some of her areas of interest are sociogenomics, evolution, systems biology and complexity science. In her research, Ilvanna aims to integrate evolutionary theories with genomic and social information to improve understanding of the coevolution between genomes and social behaviors. She holds a Bachelor's degree in Biology from the Universidad de Los Andes de Venezuela. She is a PhD candidate in Integrative Genomics at the Universidad Mayor, Santiago de Chile.

She is based at the GEMA Center for Genomics, Ecology & Environment where she conducts research on the relationship between genome architecture and social behaviors under the supervision of Sebastián Abades. In 2021, she was a research intern at Rudolf Hanel's lab at the Institute of the Science of Complex Systems of the Medical University of Vienna. She has recently been awarded a Writing-Up fellowship at the KLI to complete her thesis. In her free time, Ilvanna enjoys doing sports like kick-boxing, aerial silks, and biking.

Relationship between Sociality and Genome Architecture

The main goal of this thesis is understanding the relationship between genome architecture and levels of sociality in mammal's species. I integrated information from genomic, life history traits and behavioral sciences corpus into a relational database, for enabling comparative and multivariate analyses. Partial results suggest that genome architecture can be helpful to explain sociality differences between species. My project on the KLI consists in discussing results and integrating the information I got into a framework paper, and maturing the conceptual ideas that enables the study of sociality with an holistic approach, including social, biological and life history traits information, to be used to make inferences about molecular architectures of certain traits, giving insights into the coevolution of genetic and phenotypic traits.



2.3 Postdoctoral Fellowships



Corey BUNCE

(September 2022 – August 2023)

Corey Bunce is a biologist with a broad range of interests across development, evolution, systems biology, and philosophy of biology. He obtained a Master's degree in Cell and Developmental Biology from the University of Connecticut where he specialized in symbiosis and studied developmental regulation in hydrothermal vent tubeworms. He completed his Ph.D. in Cell Biology at Duke University where his research investigated the spatiotemporal dynamics of mouse gonad development and sex determination. At the KLI, Corey will explore the discursive side of science, hoping to bridge biological research practices and literary theory.

Challenges in Narrative Structuring for Biology Research Reporting

Modern biology is a primarily discursive endeavor. Researchers acquire and contribute the majority of their knowledge of biology through communication with other researchers in the form of scientific research, review articles, and presentations. This project investigates the ways our interpretation of life is shaped by science's formal and informal methods and norms of communicating through application of literary thinking to scientific research reporting. The primary focus will be on narrative structuring. Biological research reports must integrate two parallel plots, 1) the events of the scientific investigation and 2) the events of the natural phenomenon. The theoretical branch of this project will use tools of narratology and accounts of science article writing and reading, as well as discussions with practicing biologists, to elucidate conscious and unconscious roles of narrative and the types of narratives that occur in mediums of research communication. The empirical branch of this project will analyze the way biologists organize narrative in developmental biology.

The chronology of developmental processes will be compared to the organization of the presentation in primary research articles and reviews to identify the dominant organizing principles. The role of narrative has been articulated for the presentation of scientific material to the public, but there is little material directed at communication between researchers.

Christian DORNINGER

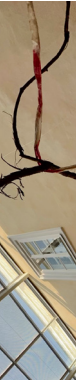
(January 2020 – June 2022)



Christian Dorninger is a postdoctoral research fellow at the KLI since January 2020. He has an interdisciplinary background spanning over social ecology, to sustainability science, sociology, and international development studies. His research interests include the development and application of methods of human-nature interaction, the sustainability transformation, resource use and decoupling, a biophysical perspective on trade relations, teleconnections, and ecologically unequal exchange.

Human Niche Construction in the Anthropocene: From Taming Nature to Taming Growth?

The global sustainability crisis has been described as a result of the uniquely human form of adaptability and niche construction. Humanity has evolved to become a driving force of global environmental change and influences a substantial and growing part of natural ecosystem interactions and energy flows. At the same time, human distance to nature increased remarkably during the last decades due to processes of globalization and urbanization. The increasing biophysical disconnect between humans and nature effectively works to circumvent limitations and self-constraining feedbacks of natural cycles, which is a crucial feature of niche construction. In this project, I explore how increasing forms of human-nature disconnections can be grasped as a form of human niche construction where cultural innovations are set to circumvent self-constraining feed-



backs by a temporal avoidance of direct consequences from the environment. However, the progressive industrial human niche construction ultimately threatens the very existence of future generations and of other species. Applying a niche construction perspective on modern human-nature disconnections has the potential to yield in truly new research insights which might help us to guide human-nature co-evolution on a much more sustainable pathway.



Cameron HU

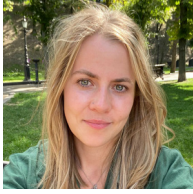
(June 2021 – September 2022)

Cameron Hu is a cultural anthropologist working across traditions of science studies, environmental studies, political economy, postcolonial criticism, and social theory. His ethnographic research examines the valences of technoscience amidst worldwide ecological turbulence; historical and emerging formations of capitalism and imperialism; the aesthetics and geopolitics of the multinational business corporation; ideologies of limitation and infinitude; and modern grammars of historicity, futurity, and action. His theoretical research explores the provocations of ordinary language philosophy for social theory. Cameron's book manuscript, "Knowing Destroying: The Geopolitics of Fracking and the Metaphysics of Imperialism," connects these concerns through an ethnography of "unconventional" petrochemical extraction in the Texas-Mexico borderlands. Parallel to his scholarly work, Cameron has published numerous essays and reviews on contemporary art and aesthetics, and makes fictions, films, installations, and performances with the collective LiCo (most recently, for the exhibition "Lithium" at Het Nieuwe Instituut, Rotterdam). Cameron received a BA in near eastern languages and civilizations from the University of Pennsylvania and a PhD from the Department of Anthropology at the University of Chicago, where he

taught courses on the anthropology of capitalism, liberalism and its critics, and the notion of a planetary geopolitics. At the KLI, he is beginning new research into the imaginative techniques through which North Atlantic states and corporations strive to grasp Earthly life as a totality.

Scenario Planning and the Anticipatory Epistemologies of Planetary Governance

My project examines a major epistemic and imaginative technique through which North Atlantic institutions now perceive and govern the turbulent globe as a totality: “scenario planning.” Scenario planning is a central method of post-statistical futurology, premised on imaginative narrative rather than the extrapolation of probable trends. Developed by multinational oil companies during the energy crises of the 1970s, and later adopted as a tool for the governance of the planetary environment amidst global warming, scenario planning is today a central method of foreknowledge through which North Atlantic states, corporations, and institutions of international governance systematically envision the plausible futures of the planet, and the possibilities and consequences of their own actions within those futures. Beginning from the anthropological premise that such techniques of anticipatory knowledge are not value-neutral tools but historically and culturally specific genres for envisioning and ordering collective existence, my project asks how scenario planning enframes the politics of planetary sustainability today. My research will explore the logic of global-scale scenario planning through examination of two critical cases: (1) its cultivation at Royal Dutch Shell in the 1970s, under the influence of cybernetic theory and global decolonization, and (2) its contemporary deployment in the making of the Assessment Reports of the Intergovernmental Panel on Climate Change. By examining the work of scenario planners through archival and ethnographic research, I mean to elucidate the political significance of the epistemological and imaginative techniques that underpin global sustainability governance in a warming and unequal world.



Marina KNICKEL

(October 2022 – September 2023)

Marina Knickel was a junior researcher at the Department of Agriculture, Food and Environment of the University of Pisa and a guest researcher at Wageningen University (the Netherlands) and Baltic Studies Centre (Latvia) working in two projects: Horizon 2020 project ROBUST on rural-urban relations and Interreg project Food Pro-tec-ts in the Dutch-German cross-border region Euregio Rhein-Waal. In ROBUST, she has led a task on monitoring and evaluation of joint learning processes in 11 Living Labs (research-practice partner teams). Her research interests include co-learning processes in trans-disciplinary research around agri-food and rural-urban issues, science-policy-practice collaboration, and functioning of the Living Lab approach in multi-actor research projects.

Knowledge Integration in the Theory and Practice of Interdisciplinary and Transdisciplinary Collaboration in the Agri-Food and Social-Ecological Research: From Challenges to Opportunities

The challenges societies are facing today (e.g., climate crisis, biodiversity decline, resources depletion, pandemics) and the solutions to be developed transcend disciplinary boundaries, are multi-sector and multi-actor, connect local and global, and they are intertwined with diverse and dynamic socio-cultural and political contexts. Pursuing sustainability requires fundamental and deliberate changes in knowledge systems. In fact, integrating different kinds of knowledge and different ways of knowing is increasingly seen as a precondition for achieving sustainability.

A key feature of interdisciplinary (ID) and transdisciplinary (TD) research approaches is their aim to bridge different knowledge systems. To use and generate knowledge for solving complex real-world problems, scientists need higher-order cognitive skills when applying theories, models, concepts or data in ID and TD research. However, contributions on how to theoretically and

practically integrate different knowledge systems remain scarce and scattered and multiple inconsistencies are identified between the theory and practice of ID and TD sustainability research.

My research aims to go beyond the state-of-the-art by providing both theoretical and empirical contributions on how to enhance the integration of different knowledge systems. In doing that, I will pay particular attention to underexplored epistemological and cognitive mechanisms. This will include exploring the ‘lenses’ of different actors in the knowledge system and their collaborative capacity as well as examining how joint learning processes and knowledge integration can be fostered across disciplinary, cultural, and sectoral boundaries.

My research will build on a two-step iterative research design whereby theoretical and empirical explorations will be mutually reinforcing. The qualitative and quantitative data available for the analysis comprise three online surveys providing longitudinal data over 4 years and multiple interviews with key actors.

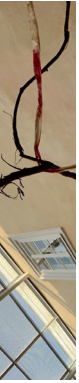
By using different methods in this two-step iterative research design, a more differentiated analysis of knowledge integration and learning processes accounting for socio-cultural context will be possible. Thanks to the novel and encompassing theoretical framing achieved in the first step, the empirical analysis is expected to contribute to shaping theory and indicating new avenues for research.

Luana POLISELI RAMOS

(September 2021 – August 2022)

Luana Polisele Ramos holds a PhD in history, philosophy and science teaching. She worked as a researcher at the National Institute of Science and Technology / Inter- and Transdisciplinary Studies in Ecology and Evolution (INCT/INTREE) of the Federal University of Bahia (UFBA). She is also a researcher involved in the ERC project ‘Local Ecological Knowledge’ coordinated by David Ludwig of the Wageningen University.





Ecological Understanding as Key to Improve Sustainability Sciences

Due to the aggravation of environmental problems, scientists are called to develop solutions for a sustainable future. Part of the models scientists develop to explain these problems rely strongly on visual representation in order to strengthen their intelligibility. According to the contextual theory of scientific understanding, the more intelligible a model, the bigger the chances to achieve understanding. This project aims to answer how can ecological understanding be improved through visual representations? This question will be tackled interdisciplinarily between philosophy, ecology, and aesthetics. If one of the epistemic goals of science is to explain and understand phenomena, to acquire a good philosophical knowledge about ecological understanding is of utmost importance to improve a sustainable world.



Marco TREVEN

(June 2021 – December 2022)

Marco Treven is an MD/Ph.D. and resident at the Department of Neurology, Medical University of Vienna (MUW). He received his PhD in neurobiology from the MUW with a dissertation about extrasynaptic GABA(A) receptors in neurological disorders and basal ganglia. Building on this pharmacological work, he has developed a particular focus on movement disorders and deep brain stimulation. He is interested in deliberate, automatic, and repetitive human behavioral patterns, expressed in movement and abstract cognition, and how such patterns are related to generative internal models or beliefs. In this context, he aims to expand the cognitive framework of Predictive Processing in neurological disorders and extended / distributed cognition. This includes the notion of individually and culturally shaped affordances and the

principles of active inference, prediction error minimization, and determinants of belief revision. The potential relevance of this work extends from a better understanding of neuropsychiatric disorders to the interplay between public health and sustainable behavior within environmental niches.

Applying Predictive Processing to Behavioural Patterns in Neuropsychiatric Disorders and Distributed Cognition

Predictive Processing (PP) is a cognitive framework based on the principle that sentient systems (and specifically nervous systems) strive to anticipate homeostatic imperatives by minimizing prediction errors in immediate action-perception loops and detached, abstract cognition. PP provides the tools and language to describe how generative models or beliefs are constructed and dynamically handled through prediction error minimization. Overweighted high-level generative models or beliefs are increasingly recognized in neuropsychiatric disorders, underpinning maladaptive patterns and habits of movement, behavior, and thought. Understanding which factors might catalyze the flexible revision of generative models is relevant not only for neuropsychiatric disorders but also for maladaptive aggregate human behavior resting on overweighted socially and culturally held beliefs. This aggregate-level likely has emergent properties beyond the sum of individual preferences. The project outlined here aims to explore how PP can help understand and overcome rigid, stereotyped behavioral patterns resulting from overweighted generative models implemented in different, evolutionarily nested levels of cognition. Firstly, existing evidence will be recapitulated and synthesized regarding how generative models are structurally implemented at different levels of cognition, including extended / group / distributed cognition, and how they determine deliberate and automated behavioral trajectories. Secondly, potential parallels, analogies, and metaphors will be explored to understand maladaptive models at supra-individual cognitive levels. This approach will be positioned into a long tradition of extrapolating and understanding the interdependencies between individual and public health and



how they interact with the environment. Accordingly, PP might become applicable for sustainable aggregate human behavior on a planet that is increasingly transformed by particular dominant, culturally held belief systems. Such an approach might help to revise conventional beliefs about human nature, from maximizing reward to maximizing feedback-driven adaptive fitness within ecological niches. Finally, specific novel experimental methodologies will be explored that are suitable to investigate belief revision.



Marco Paulo VIANNA FRANCO

(October 2020 – January 2023)

Marco Vianna Franco is a professor and researcher in applied sciences and public policies at Fundação João Pinheiro (Brazil). He received a PhD in economics from Cedeplar / UFMG with a dissertation on the history and philosophy of ecological economic thought. He is interested in human-nature relations from the perspectives of political economy, intellectual history, and philosophy of science.

A History of Ecological Economic Thought

The project focuses on the development of a book manuscript to be published by Routledge in 2022. Its aim is to provide a historical account of the development of a set of ideas referred to as ecological economic thought, i.e., a body of knowledge presenting substantial articulations between ecology and economics. The latter is described by means of analyses of flows and stocks of energy and matter in complex socio-ecological systems, including their implications for processes of social provisioning and cultural development. It entails a biophysical and (co-)evolutionary approach to economic science, as well as philosophical views on the relations between humans and their environment, such as nature as a source of value, moral aspects regarding natural resource distribution, and technological and behavioral transformations.

Luis Alejandro VILLANUEVA HERNÁNDEZ

(January 2021 – March 2023)



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Luis Alejandro Villanueva Hernández completed his BA in philosophy at the Benemérita University of Puebla BUAP, followed by a MA in ethnomusicology at the National Autonomous University of Mexico (UNAM). From January to June 2016 he did a PhD stay research under the supervision of Professor Ian Cross in the Centre for Music and Science at the Faculty of Music of the University of Cambridge. In his PhD dissertation, supervised by Professor Sergio F. Martínez, he explored models of niche construction, material culture evolution, social interaction, cognitive ethnomusicology, cognitive archaeology, and embodied music cognition, to develop a framework that would allow the integration of different scientific findings going on different disciplines that may be relevant to explain the origins of musical cognitive capacities. He has previously received a KLI writing-up fellowship to complete his PhD thesis.

He is also an active musician and plays a wide range of traditional musical instruments from Mexico and South America. He has been, for many years, a member of a Mexican musical band called Tsasná (moonlight in Totonac language) with which he has recorded several albums and performed in many international music festivals in Mexico, Europe, South America, and Asia.

Social Affordances in the Transmission and Evolution of Music: A Theoretical Evo-Devo Approach

It has been argued that cultural evolution and genetic inheritance are driven by similar rules. However, such accounts of evolution misperceive an important set of disanalogies between the structure of genetic inheritance and the structure of complex processes of cultural transmission. Furthermore, these models usually left unattended the important role that the development of human organisms play in the production and transmission of cultural traits. Unlike a purely gene-centered approach, EvoDevo research agenda has focused on two key



problems about evolution: how do evolutionary mechanisms generate and modify organismal developmental processes, and how does the structure of developmental processes shape back the patterns and processes of evolution. This implies that to understand either evolutionary or developmental processes, we need to understand how they shape one another. Music is a particularly rich cultural expression in which these interrelational processes can be explored.

The process through which individuals acquire a repertoire of musical skills is a multifactorial one (taking place during the personal development of individuals within a social group), and this is possible because social environments afford the maintenance of standing musical practices. The study of the reciprocal interrelation between the acquisition of musical skills and the maintenance and evolution of a musical tradition over time has not been explored yet. I suggest that the notion of social affordances – understood as a set of possibilities for social interaction provided by a sociomaterial environment – would shed valuable light on the way that these interrelational processes function. Thus, the integration of this concept into an EvoDevo account of music would bridge this research gap, which constitutes the main theoretical contribution of this project.



Cristina VILLEGAS CERREDO

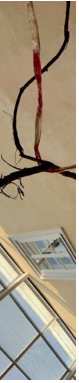
(September 2021 – October 2022)

Cristina Villegas is a philosopher of biology working on probabilities and the notion of chance in evolutionary biology. She graduated in philosophy at the University of Seville (2013), and obtained Master's Degrees in education (UGR, 2014) and logic and philosophy of science (USC, 2015). In 2015, she joined the Complutense University of Madrid with a predoctoral fellowship from the Spanish Ministry of Economy and Competitiveness. She obtained her PhD in 2020 (thesis title: 'Variational Probabilities and Developmental Propensities. A Philosophical Study of Chance in Evolutionary Variation').

Her main research interests include philosophy of evolutionary biology, philosophy of probability, interdisciplinarity in evolution, causality and dispositional explanations, and evolutionary developmental biology.

Evolutionary Propensities and their Evolution

Philosophers have paid attention to some probabilistic aspects of classical evolutionary genetics, while they have left aside the role of probabilities with respect to the origin and impact of phenotypic variation. In this project, I intend to fill an important gap of this situation by philosophically characterizing the interactions between the evolutionary propensities of the classical framework of evolutionary genetics (fitness and the capacity to drift) and those of new methodological approaches, notably EvoDevo, interested in the nature and impact of variation in evolution, known as ‘variational tendencies’ (evolvability, variability, robustness, modularity and plasticity). The aim of the project is to develop a coherent, integrative framework for the relationship between these two kinds of evolutionary properties, as well as the relevant notions of randomness and contingency that they demand. Such a coherent philosophical framework will move beyond the current acknowledgement of a pluralism of approaches to evolution towards an encompassing view of the current diversity in explanatory and predictive probabilistic models within the evolutionary disciplines. More particularly, filling this gap is an important step towards the overcoming of two dichotomies in the philosophy of evolution: the opposition between ‘population’ and ‘typological’ thinking, and the one between necessity and contingency.



2.4 Senior Fellowships



Orsolya Rita BAJER-MOLNÁR

(November 2021 – October 2022)

Orsolya Rita Bajer-Molnár is an evolutionary biologist, with a passion for both research and education. She received her Master's diploma from Eötvös Loránd University in evolutionary biology, ecology and systematics. Five years later, she completed her PhD in behavioural ecology and evolutionary biology. She then won a postdoctoral scholarship at Dartmouth College, NH, after which she continued research at UFRN in Brazil. Upon returning, she turned towards the evolutionary dynamics of emerging infectious diseases, which she is currently working on in collaboration with the University of Nebraska and Centre for Ecology Research (Hungary).

Throughout her research, she had always been interested in science communication. Overseas she organized networking events, conferences and outreach programmes, and taught graduate and undergraduate students. She took an active role in science communication, and after numerous appearances she just recently gave a TedX talk. Her aim is to increase the visibility of research, and thus facilitate a combined effort to prevent the emerging infectious diseases.

Praction Plan – Implementing Disease Prevention in Modern Society

Emerging Infectious Diseases (EIDs) are one of the major threats on global human health and economy, with an increasing number of novel epidemics appearing each year. Although they vary in pathogen and severity, the underlying evolutionary processes of emergence are shared by all, it is therefore through these drivers that we can predict and act to prevent outbreaks. The DAMA protocol was developed as a framework for coping with EIDs, where *Documentation* of potential pathogens is followed by an *Assessment* of the risk they pose. High-risk taxa and their reservoir hosts are then

Monitored to reveal geographic distribution and an Action plan can be developed to avoid infection of human and/or economically significant species (livestock, crops).

As a comprehensive protocol, the DAMA's final Action phase requires the efficient and fluent collaboration of multiple diverse fields, such as research, health care, economics, politics and policy-making. My proposal aims to initiate targeted discussions with experts of the mentioned areas in an effort to create crucial guidelines and scenarios for the implementation of the DAMA protocol. My work will include contacting current and potential collaborators, round-table discussions, analysis of case studies, theoretical simulations of hypothetical epidemics and the creation of final reports containing significant challenges, recommendations and action plans specific for each field.

As a member of the KLI community, I will also use this opportunity to invite collaborators to contribute to the institute in the form of talks, seminars and symposia, and further raise awareness about EIDs among the general public through various tools of science communication.

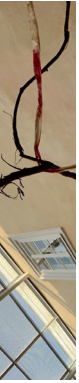
Laura MENATTI

(October 2022 – September 2023)

I am specialised in environmental philosophy, landscape theory and philosophy of medicine. My research aims at developing a theoretical and practical framework for the investigation of the notion of environment and its effects on health. During my research career, I have pursued an interdisciplinary and transdisciplinary trajectory. My research activities are at the crossroads of philosophy, environmental and cognitive science, they are based on a quantitative and qualitative research methodology and on-field activities. I have been teaching and doing research in different faculties and departments (medicine, architecture, philosophy, science) in Spain, Chile, Italy and France.

Recently I have been a visiting fellow (Spring Term 2022) at the Center for Philosophy of Science of the University of





Pittsburgh. During 2021, I have worked as a postdoctoral fellow at the IAS-Research Centre for Life, Mind & Society of the University of the Basque Country (UPV/EHU), in San Sebastian (Spain).

I have been collaborating as lecturer with the Bordeaux School of Architecture and Landscape (ENSAPBx Bordeaux - France), the University of the Basque Country (UPV-EHU) and the Public University of Navarra (UPNA), the University of Chile (Santiago) and the University of Desarrollo (UDD, Chile). I am also book reviews editor of the journal Landscape Research.

I have two PhDs in philosophy, one in aesthetics from the University of Pavia (Italy) and a second one in philosophy of globalisation from the University of the Basque Country (UPV/EHU). In 2015, my second PhD thesis received The Landscape Research Group Dissertation Prize for the best PhD essay on landscape (section art and design) by the Landscape Research Group (research group associated with the journal Landscape Research, Q1 Scopus).

Health and Environment. An Integrative Philosophical Framework to Understand our Relationship with the Surroundings

Health has been mostly discussed in biomedical sciences and humanities in terms of pathology and dysfunction. Disease, pain, and well-being are also mostly defined in these terms. What is absent is a relational framework of health and well-being that accounts for the ways in which the environment both supports and promotes health, rather than being just a source of negative impacts. The COVID-19 pandemic and the projected ways climate change will transform our conception of health and well-being show the need to incorporate the environment in the analysis of health. Practical changes have started to be made. International documents and amendments to the mainstream definitions of health have been calling for the importance of the environment in medical

theory and education. A thorough conceptual analysis of the relationship between health and environment that unifies the contributions from different disciplines is thus needed. This project meets the urgency of this need, by extending my previous philosophical work into an interdisciplinary framework for understanding the coupling between health and environment. The project provides a theoretical analysis in which philosophy is continuously engaged with medical and environmental sciences leading to practical applications. The project has two parts: 1) analysing different conceptualizations of the environment in biomedical sciences in terms of salutogenesis and pathogenesis; 2) applying the concepts of adaptation and adaptivity to further develop these conceptualizations.

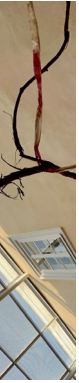
These two steps together will provide a relational and situated characterization of the health-environment coupling. I will illustrate how the environment, as related to health, does not constitute only a set of independent boundary conditions affecting a system / human health nor a generic source of perturbations. Rather, I will demonstrate how the environment can be understood as a source of salutogenic opportunities that allow a system to expand its range of viability. This project has applications that go beyond philosophy, as it will help reorient medical education and healthcare practice towards sustainability and environmental thinking.

Simon NEUBAUER

(May – June 2022)

Simon Neubauer holds a PhD in anthropology. After his undergraduate studies at the University of Vienna, he was a Marie Curie doctoral fellow at the Department of Human Evolution of the Max Planck Institute for Evolutionary Anthropology in Leipzig, a visiting lecturer at the University of Vienna, and a postdoctoral researcher at the Department of Human Evolution, Max Planck Institute for Evolutionary Anthropology, Leipzig.





How our Brain Got Asymmetric: EvoDevo of Endocast Asymmetry

The left and right hemispheres of the human brain are specialized for different cognitive tasks. This functional lateralization is reflected in the morphological asymmetry of the brain. Based on brain imprints in bone (endocasts), however, we recently found that our closest living relatives, the great apes, share the same mean asymmetry. This challenges the longheld view that the pattern of brain asymmetry is unique to humans (Neubauer et al., 2020), and suggests that an ancestral pattern of asymmetry was adopted for typical human lateralized abilities and to reinforce the functional and developmental modularization of the human brain. However, little is known about the developmental dynamics of brain asymmetry and whether developmental trajectories differ between humans and apes.

Here, I will investigate ontogenetic changes of brain asymmetry in humans, chimpanzees, gorillas, and orangutans to assess how and when the typical asymmetry pattern arises in development and when variation in humans deviates from that in great apes. Based on endocasts as proxies for the brain, I will model the developmental dynamics of directional and fluctuating asymmetry and try to disentangle functional lateralization, developmental instabilities and allometric effects. I will rely on state-of the art geometric morphometrics based on 3D (semi)landmarks captured from CT scans. I combine an evo-devo approach with novel multivariate methodology to overcome the classic typological approach of studying brain asymmetry, which tends to overlook important aspects of asymmetry and neglects individual variation. This comparative approach promises novel insights into the development and evolution of human brain asymmetry interesting for discussions in paleoanthropology, evolutionary neuroscience, cognitive biology, primatology, and archaeology.

Hari SRIDHAR

(October 2022 – September 2023)



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Hari Sridhar is an independent researcher based in Bangalore and an honorary fellow of the Archives at NCBS (National Centre for Biological Sciences). Hari is involved in two longform interview-based projects examining the contemporary history of conservation in India, especially in relation to the intersection of ecological knowledge and conservation practice. Over the last seven years, Hari has also lead another interview-project with authors of classic papers in ecology, evolution and behaviour, which he posts on the blog <https://reflectionsonpaperspast.wordpress.com> Hari's other major research interest lies in understanding the causes and consequences of heterospecific sociality, a topic he has researched during his PhD and post-doctoral research at the Indian Institute of Science, Bangalore. In addition to doing research, Hari guest-teaches ecology and ornithology at various research institutes and colleges in India, and has been an editor of the Current Conservation magazine.

An Elephant in the Room? The Place of Science and Scientists in Conservation Decision-Making in India

While there is general consensus about the existence of a knowledge-action gap in the fields of ecology and conservation, its causes are hotly-debated. Broadly, this debate can be characterised as having two dominant perspectives. One perspective is based on the idea that knowledge always flows unidirectionally, from scientist to practitioner, and the gap is mainly a consequence of inadequacies in the generation, communication and/or use of scientific knowledge. This perspective has come, mostly, from inside science. The other perspective is based on the idea that knowledge flows bi-directionally between scientist and practitioner, i.e. it is co-produced, and the gap exists because of the lack or infrequency of interactions between scientist and practitioner. This view has come mainly from outside science.



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Independent of this debate, knowledge, whether produced only by scientists or jointly by scientists and practitioners, is believed to inform practice in different ways, including instrumentally, conceptually and symbolically. In this project, I would like to provide empirical grist to these theoretical mills using two approaches: 1. Focussed, in-depth interviews of scientists about their personal experiences in attempting to create ecological knowledge useful for conservation action; 2. Systematic analysis of scientific evidence used in conservation decision documents (e.g. policy documents, park management plans, environmental impact assessments etc.).

This project will be focussed on India, which presents a unique case in the global debate on the science-conservation gap. Conservation science in India is largely based upon ideas and theories from the west (what one might call Michael Soulé's Conservation Biology (Soulé 1985)). At the same time, India's historical resistance to foreign scientists working within its borders has meant that its conservation biology community consists mostly of Indians; in contrast to other countries of the global south, where conservation biology is dominated by scientists from the global north. Indian conservation scientists, while engaging with western conservation biology, have had their ears closer to the ground, questioned conservation biology's relevance and taken a much more bottom-up approach to engaging with conservation action. The Indian conservation scientist community is, therefore, likely to contain a wealth of unique experiences and perspectives related to science's role in conservation. I hope that the findings from the proposed project will help paint a nuanced picture of how science, both in intended and unintended ways, informs and engages with conservation practice, and point the way towards more effective use of science in solving our growing environmental problems.

Eörs SZATHMÁRY

(September – December 2022)



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Eörs Szathmáry studied biology at the Eötvös Loránd University in Budapest. After finishing his PhD, he served as research fellow at Eötvös University (Budapest), later becoming professor and head of the Department of Plant Taxonomy and Ecology. Szathmáry was guest of the Wissenschaftskolleg zu Berlin, the University of Zürich and the College de France in Paris. He was serving as permanent fellow of the Collegium Budapest (Institute for Advanced Study, 1995-2011). Since 2011 he is the director of the Parmenides Center for the Conceptual Foundations of Science at the Parmenides Foundation in Munich, Germany. His research topics include: the major evolutionary transitions, origins of life and the genetic code, emergence of the human language faculty, levels and mechanisms of biological cooperation, Darwinian neurodynamics and astrobiology. Between 2019 and 2021 he served as Director General of the Centre for Ecological Research in Hungary. Prizes: New Europe Prize for Higher Education and Research (1996) Academy Prize (1999), Széchenyi Prize (2017) Member of the Presidium of the Hungarian Academy of Sciences, the Norwegian Academy of Sciences and Letters, Academia Europaea and EMBO

Foundations of Evolutionary Biology

During the fellowship, Eörs Szathmáry is working on the following projects:

1. Computability of (almost) arbitrarily complex, Genetic Regulatory Network-based developmental systems, by the application of a mapping to neural networks
2. Model of genomic expansion as an evaluation of the mitochondrion-early hypothesis
3. Syncytial organization of the Urkaryote
4. Ezhov-mechanism for replication of attractors from one neural network to another
5. Ageing as a possible evolvability component: analysis by cellular automation and metapopulation models



Marco TREVEN

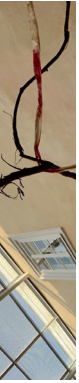
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Marco Treven is an MD/Ph.D. and resident at the Department of Neurology, Medical University of Vienna (MUW). He received his PhD in neurobiology from the MUW with a dissertation about extrasynaptic GABA(A) receptors in neurological disorders and basal ganglia. Building on this pharmacological work, he has developed a particular focus on movement disorders and deep brain stimulation. He is interested in deliberate, automatic, and repetitive human behavioral patterns, expressed in movement and abstract cognition, and how such patterns are related to generative internal models or beliefs. In this context, he aims to expand the cognitive framework of Predictive Processing in neurological disorders and extended/distributed cognition. This includes the notion of individually and culturally shaped affordances and the principles of active inference, prediction error minimization, and determinants of belief revision. The potential relevance of this work extends from a better understanding of neuropsychiatric disorders to the interplay between public health and sustainable behavior within environmental niches.

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catalyze the flexible revision of generative models is relevant not only for neuropsychiatric disorders but also for maladaptive aggregate human behavior resting on overweighted socially and culturally held beliefs. This aggregate-level likely has emergent properties beyond the sum of individual preferences. The project outlined here aims to explore how PP can help understand and overcome rigid, stereotyped behavioral patterns resulting from overweighted generative models implemented in different, evolutionarily nested levels of cognition. Firstly, existing evidence will be recapitulated and synthesized regarding how generative models are structurally implemented at different levels of cognition, including extended/group/distributed cognition, and how they determine deliberate and automated behavioral trajectories. Secondly, potential parallels, analogies, and metaphors will be explored to understand maladaptive models at supra-individual cognitive levels. This approach will be positioned into a long tradition of extrapolating and understanding the interdependencies between individual and public health and how they interact with the environment. Accordingly, PP might become applicable for sustainable aggregate human behavior on a planet that is increasingly transformed by particular dominant, culturally held belief systems. Such an approach might help to revise conventional beliefs about human nature, from maximizing reward to maximizing feedback-driven adaptive fitness within ecological niches. Finally, specific novel experimental methodologies will be explored that are suitable to investigate belief revision.



2.5 Visiting Scientists



Roberto CAZZOLLA GATTI

(November – December 2022)

Roberto Cazzolla Gatti, Ph.D. is an Italian ecologist, conservation biologist, and evolutionist. He is an Associate Professor of Biological Diversity and Conservation at the Department of Biological, Geological and Environmental Sciences (BiGeA) of the Alma Mater Studiorum – University of Bologna, Italy, where he is also a member of the BIOME – Biodiversity and Macroecology Lab. Moreover, he serves as an External Faculty Member of the Konrad Lorenz Institute for Evolution and Cognition Research in Austria. From 2015 to 2021, he served as an Associate Professor at the Biological Institute and as the Head and Scientific coordinator of the International MSc Program in Biodiversity of the Tomsk State University, in Russia. In parallel to his professorship in Russia, in 2021, he also worked for a semester as an Associate Professor of Ecology at the Polytechnic of Rouen (UniLaSalle) in France; in 2020-2021 he was a Senior Research Fellow of the Konrad Lorenz Institute for Evolution and Cognition in Austria; in 2018-2019 he joined the Department of Forestry and Natural Resources of Purdue University in the USA as a Research Associate; and in Summer 2019 he was a Visiting Professor of the Beijing Forestry University in China to teach Biodiversity to international Ph.D. students. In 2018, he was included among the 105 interdisciplinary “visionary smart thinkers” by the renowned magazine “Motherboard” of the Vice Media Group. His research deals with the differing shades of Biological Diversity and Conservation (plant, animal, ecosystems), and Global Environmental Protection occurring, therefore, at the interface between macroecology, evolutionary biology, biogeography, and behavioural ecology. In

his spare time, he also writes books and popular scientific articles, paints naturalistic watercolours, hikes and works as a freelance documentary photographer and wildlife filmmaker.

Self-cognition with Sensorial Diversity

Self-awareness has always been a central theme in philosophical and biological research since ancient times. In the temple of Apollo at Delphi, the exhortation “Know yourself” is inscribed in Greek, an invitation to men to understand their own finitude, to understand their limits. Then René Descartes wrote, in Latin in his Discourse on the Method, “Ego cogito, ergo sum, sive existo” (I think, therefore I am, or I exist) to underline the fact that existence derives from our awareness as thinking beings capable of reflecting on ourselves. The self-recognition (i.e., the ability to recognize oneself) of living beings has been scientifically examined by studying the behavior of animals and children in response to their reflection in the mirror. However, the idea behind this test, which is that understanding the concepts of “self” and “other” is proof of self-awareness, has been contested several times. According to Carl Safina, for example, it is still unclear whether animals that do not recognize their reflection in the mirror are not truly self-aware. Recently, new tests based on different senses provided significant clues of animals’ self-awareness. These innovative approaches highlight the need to shift the paradigm from the anthropocentric idea of consciousness into a specific perspective for each species.

Giuseppe FEOLA

(April 2022)

Dr. Giuseppe Feola is a social scientist who conducts research on socioecological change in modern societies. His research aims to develop an empirically based theory of societal transformation towards forms of society and economy which, not depending on perpetual economic growth,





aim at the wellbeing of all and sustain the ecological basis of life. His research unfolds primarily along two research lines. First, he is interested in ongoing processes of societal transformation led by grassroots civil society actors and social movements, especially those mobilizing around agri-food systems' (un)sustainability. Central to this research line is the un-disciplined use of sustainability transition and transformation theories, including critical, postdevelopment and decolonial approaches for theorizing transformation toward sustainability. Second, he is interested in understanding the linkages between the environment and rural development, and how individual and collective actors attempt to govern them. For example, he has investigated sociocultural responses of Andean peasant to environmental change, and land-use conflicts related to urban transformation in peri-urban spaces. This research has primarily taken place in Europe and Colombia. Dr Feola is Associate Professor of Social Change for Sustainability in the Copernicus Institute of Sustainable Development at Utrecht University, the Netherlands. He has an undergraduate degree in Sociology (2002) from the University of Milan-Bicocca, an MSc in Environmental Economics and Management (2003) from Bocconi University in Milan, and a PhD (2010) from the Department of Geography of the University of Zurich.

The Schismogenic Hypothesis: Conceptualizing Grassroots Sustainability Transformation as a Process of Conscious Self-Determination by Differentiation

Theorizations of sustainability transformation have foregrounded the construction (making) of novel socioecological relations; however, they generally have obscured processes of deliberate deconstruction (unmaking) of existing, unsustainable ones. Amidst ever more compelling evidence of the simultaneous unsustainability and continued reproduction of capitalist modernity, it is misguided to assume that transformation can happen by the mere construction of supposed 'solutions', be they technological, social or cultural. We rather need to better understand whether and how existing institutions, forms of knowledge,

practices, imaginaries, power structures, and human-non-human relations can be deconstructed or disabled at the service of sustainability transformation. This talk demonstrates the usefulness of a lens that attends to processes of making and unmaking in sustainability transformations through an analysis of cases of grassroots initiatives that concretely prefigure sustainable and just alternatives to capitalism. This talk identifies processes of unmaking of capitalism in illustrative agri-food grassroots initiatives in Europe and Colombia, and demonstrates how they are concretely entangled in the construction of post-capitalist socio-economic and socioecological relations. Central to this is the dialogue between theories from as diverse fields as sustainability transitions, degrowth, political ecology, decolonial and indigenous, resistance, anarchist, and cultural studies scholarship. The talk concludes by proposing, as a way of synthesis, a conceptualization of grassroots initiatives as schismogenic processes – processes of conscious self-determination by differentiation. This allows to formulate novel hypotheses and research questions on the generative forces underpinning making and unmaking and enabling directionality of grassroots sustainability transformation.

Kevin LALA (formerly LALAND)

(March – August 2022)

Kevin Neville Lala is an evolutionary biologist and Professor of Behavioural and Evolutionary Biology at the University of St Andrews. Educated at the University of Southampton and University College London, he was a Human Frontier Science Program fellow at the University of California, Berkeley before joining the University of St Andrews in 2002. He is one of the co-founders of niche construction theory and a prominent advocate of the extended evolutionary synthesis (EES). He is a fellow of the Royal Society of Edinburgh and the Society of Biology. He has also received a European Research Council Advanced Grant, a Royal Society Wolfson Research Merit Award, and a John Templeton Foundation grant.





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Evolution Evolving: The Developmental Challenge to Evolutionary Science

The field of evolutionary biology is changing. New ideas are flooding into it from evolutionary developmental biology, epigenetics, ecology, genomics, and many other disciplines. According to leading evolutionary biologist, Stevan Arnold (2014) “to synthesize this information we need diverse perspectives, and bridges between them.” One such novel perspective is the Extended Evolutionary Synthesis, or EES (Pigliucci & Müller, 2010; Laland et al 2014, 2015; Müller, 2017). Central to this perspective is the idea that knowledge of how organisms develop, grow, and interact with their environments, helps researchers to account for both adaptation and the diversity of life.

While inspired by developments in evo devo, eco evo devo, paleontology, behavioural science and elsewhere, in recent years the EES has consolidated into a research program in its own right. New findings are emerging from it almost daily, on a diversity of topics ranging from epigenetic inheritance, cultural inheritance in animals, plasticity-led evolution, niche construction, and other evolutionary biases that result from developmental mechanisms. Some semblance of a community has been established, united under the umbrella of the EES, with the EES website (www.extendedevolutionarysynthesis.com) and associated social media (@EES_update) now acting as a hub. A major international conference entitled Evolution Evolving was held at Cambridge University April 1-4 2019, which showcased the excellent science emerging from this movement.

What is required now is an accessible book that pulls all of these novel findings together and makes a coherent case for conceptual change within evolutionary biology. This requires a detailed review of new findings, as well as explanations for how they fit together to construct a new way of thinking about evolution. The book must also address philosophical and historical issues, rebut counterarguments, and spell out practical implications. The primary goal of this fellowship will be to complete a book making the scientific case for an extended evolutionary synthesis.

Vanessa TRIVIÑO ALONSO

(July 2022)

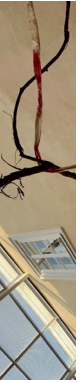


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Vanessa Trivino has studied Philosophy at the University of Murcia and obtained the “Extraordinary Prize” for her degree. She also did a Master on Contemporary Philosophy. In the year 2011, she received a fellowship from the Spanish Government to collaborate with the research group “E038-04 Cognitive Science”. Vanessa started her PhD on “Contemporary Questions in Metaphysics of Biology: Emergence, Dispositions, and Persistence in Organisms” in 2014. Currently, she is working on the idea of fitness as being an emergent property of living organisms.

The Role of Organismal Dispositions and Types in Evolution: A Metaphysical Approach

Classical evolutionary genetics is characterised for endorsing a population kind of thinking and for reducing organisms to a sum of their traits. In this framework, fitness is typically reduced to the quantitative study of the adaptive value that traits, and ultimately, genes, confer to the organism. This reductionist approach has been questioned by other branches of contemporary evolutionary biology, such as evolutionary developmental biology (evo-devo), which highlights the role that organisms play in evolutionary explanations. In this project, I want to explore the metaphysical implications and consequences of this organismal shift from the point of view of population and typological thinking. In particular, I aim at studying whether the explanatory notions assumed in evolutionary biology, and specially the use of dispositions, need to be altered or reviewed in order to make a better sense of the new organismal approach. In evo-devo, evolutionary dispositions, such as evolvability, modularity or plasticity, tend to be attributed to types of organisms rather than to individuals or populations of them (Austin 2017, Nuño de la Rosa and Villegas 2019). Yet, within the metaphysical literature, it is generally assumed that dispositions are predicated of tokens



and not of types, since only token dispositions seem to be able to instantiate and manifest a causal power (Kim 2003). Given that the evo-devo approach is employing dispositions in a different way, it is important to study whether it is also possible to talk about type dispositions in a relevant metaphysical way.

With this work, connections between metaphysics and biology can be established. These kinds of connections are, in fact, quite common in current philosophy of biology, where metaphysical concepts are used to address conceptual problems in biology (see Boogerd et al. 2005; Dupré 2012; Waters 2017). See, for instance, the the dispositional theory of causation to clarify the biological concept of gene (Mumford and Anjum 2011, ch.10), the appeal to the metaphysical concept of emergence in order to characterise developmental modules in evo-devo (Huneman 2010; Brigandt 2015), or the conceptualization of homologies and body plans as natural kinds (Hall 1996; Griffiths 1999; Rieppel 2006). Generally, philosophy of biology is benefited by using metaphysical concepts insofar as conceptual biological problems addressed by philosophers are clarified using the metaphysical tools. With this project, I want to explore, on the one hand, how evo-devo uses dispositions when attributing them to types, and whether this attribution makes sense from a metaphysical perspective. With this work, it is possible to explore whether evo-devo can be enriched by the resources that metaphysics offers. Furthermore, the study of dispositions in evo-devo might also influence metaphysics. For instance, a potential result is the necessity of developing a metaphysical characterization of type dispositions that are causally relevant. In this sense, this work can illustrate that the interaction between metaphysics and philosophy of biology can be bidirectional, allowing for cases of crossfertilization (In this regard, see Reydon 2008).

2.6 Researchers with Own Funding

Leonardo BICH

(November 2022 – April 2023)



Leonardo Bich is a 'Ramon y Cajal' Researcher at the IAS-Research Centre of the University of the Basque Country (Spain). He obtained a PhD in Epistemology of Complex Systems from the University of Bergamo (Italy). He worked at the CNRS (France), at the Biology of Cognition Lab of the Universidad de Chile, and at the Center for Philosophy of Science of the University of Pittsburgh. His research is focused on theoretical and epistemological issues related to biological organisation, autonomy, and control and on their implications for investigations in Origins of Life, Synthetic and Systems Biology, and Theoretical Biology.

Biological Individuality: A Theoretical Framework Based on Physiological Control

The debate on biological individuality has usually been focused on the definition and characterization of evolutionary individuals. Addressing this topic has helped clarify the discussion about units of selection and the requirements for evolution by natural selection. Less attention has been paid to other kinds of individuality (i.e. non-evolutionary based accounts), among which the main alternative to evolution to ground biological individuality has been constituted by organismal physiology. Non-evolutionary accounts of biological individuality are still underdeveloped in comparison to evolutionary ones. This is especially evident in relation to interactive cases (i.e. host-microbe symbioses, microbe-microbe symbioses (biofilms), colonies,) that transcend the "traditional organism."

On the one hand the very notion of organism has been challenged by cases of cohesive entities emerging from inter-



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actions. Recent research on host-microbiota and, more generally, symbiotic relationships characterized by close functional ties, for example, might seem either to question the possibility to establish clear functional boundaries for living organisms, or to call for further work of characterization of the different ways functional interactions can be established within a system or between systems. On the other hand, where generalization has been attempted, criteria involved in physiology, metabolism, organisms, anatomy, and ecology all tend to get bundled up together with very few distinctions to be made about why they go together.

The need for precise accounts based on conceptual or theoretical criteria is therefore especially apparent given new understandings of a wide range of interactive biological entities, from different types of multicellular systems to host-microbe interactions. The possibilities of forms of biological individuals arising out of interactions and new ways to identify and account for non-evolutionary individuals will be explored by focusing on physiology from an organizational perspective (or biological autonomy framework). At the same time this work will address the challenges represented by research on interacting entities, which seems to question the application of very notions of autonomy and individuality in biology.

To develop this framework on individuality, I will lean on previous work on control mechanisms, considered as those components of biological systems that are responsible for coordinating, modulating, activating and inhibiting the activities of other components in such a way as to maintain the overall viability of the biological system that harbours them. This is a step forward with respect to previous developments the organizational account, mainly focused on how a living system maintains itself by producing its parts. This approach will be applied to two case-studies: multicellular organizations and holobionts (in collaboration with Derek Skillings, UNCG).

Joyshree CHANAM

(November 2022 – June 2023)

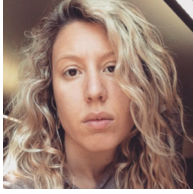
Joyshree Chanam is trained in the ecology and evolution of plant-insect interactions. She holds a Master's degree from the University of Delhi and a PhD from the Indian Institute of Science, Bangalore, India. During her PhD, she investigated dynamics of mutualistic interactions between an ant-plant (myrmecophyte) and its ant and insect associates. As a postdoctoral researcher she worked at the National Centre for Biological Sciences Bangalore and investigated the effects of climate warming on floral volatiles and plant-pollinator interactions.



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Effects of Climate Change on Food Plants

The project I pursue at the KLI stems from my experience with climate change effects on plants during my post-doc. Plants produce chemical defense compounds in response to biotic (herbivores) and abiotic stresses (heat and drought). In edible plants, these 'defense chemicals' are what we call 'flavors'. I plan to investigate how climate change affects food plants in terms of flavors, growth and yield. During my stay in KLI, I plan to conduct a literature survey of published work on this topic and write up a summary paper on how plant-based food will be affected by a future warmer climate. With that as the base, I will then work on more nuanced questions within this broad framework, and how to collect data for future work. I also plan to explore the impact of climate warming on possible eco-evolutionary dynamics of food plants, and what that implies for future wild edible plants, and communities that use them.



Flavia FABRIS

(June 2021 – September 2022)

Flavia Fabris (PhD La Sapienza University of Rome) is a philosopher of biology who worked at Egenis, the Centre for the Study of Life Sciences, at the University of Exeter. Her background is in philosophy of science and evolutionary developmental biology. From 2011 to 2014, she worked at the La Sapienza, Department of Genetics and Molecular Biology “Charles Darwin,” focusing mainly on epigenetic inheritance and the canalization of development. Since 2013, she has been associated with the Centre for Applied Philosophy of Science (CAPS) at the Norwegian University of Life Sciences (NMBU), Ås. Her research examines a variety of conceptual issues in evolutionary and developmental biology, with an emphasis on causation and on methodological and ontological aspects of scientific practice. At present, she is particularly interested in re-examining the philosophy of cybernetics, its primary forms of reasoning, and its implications for theoretical biology, with particular regard to EvoDevo and the Extended Evolutionary Synthesis.

Rethinking Cybernetics in Contemporary Theoretical Biology

In recent years, the contributions of cybernetics to the development of evolutionary developmental (EvoDevo) biology have increasingly been recognized. The particular theories and models developed during the flourishing of cybernetics in the early 20th century laid the foundation for the systems approach, which is nowadays widely and fruitfully employed in molecular biology, genetics, genomics, immunology, developmental biology, and ecology. Nevertheless, in some quarters, scholars argue that cybernetics should be treated with suspicion because many evolutionary phenomena cannot be explained reductively in terms of mechanisms, their parts, and their production. This debate, almost a decade long, has produced a considerable amount of literature, mostly

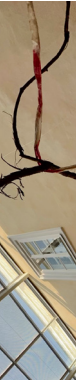
centred on the long-protracted dispute between mechanistic philosophers of biology on one side, and those who argue for the superiority of a process view of life on the other. My project aims to re-examine the philosophy and epistemology of cybernetics, its history and its implications for contemporary theoretical biology. The philosophical analysis will focus on clarifying the epistemologies of both cybernetics and EvoDevo biology, and determining how and to what extent they overlap. I aim to provide positive arguments for the conclusion that, in contrast to the predominant view, cybernetic explanations within biology, when properly understood, are a form of non-reductionist explanation. My work will also help to evaluate the general assumption that cybernetics has, at its ground, a metaphysical commitment to the mechanistic nature of life. I will put this assumption in question, and therefore suggest that the suspicion mentioned above is misplaced.

Elis JONES

(April – June 2022)

Elis Jones is an ESRC-funded PhD student working at the intersection of philosophy, sociology and marine sciences. His research focuses on the role of value in coral reef science, specifically in attempts to regenerate corals. He moved to Exeter in 2014 from the West Midlands, to study Politics, Philosophy and Economics (with Study Abroad, which he undertook in Utrecht, Netherlands). He graduated with a first-class honours degree in 2018, with his undergraduate dissertation focused on providing a non-anthropocentric definition of environmental damage. After this, he secured funding for a combined Master's / Doctorate programme (1+3) from the Economic and Social Research Council's South West Doctoral Training Partnership (SWDTP). After graduating (with distinction) from the Master's part (MRes Science and Technology Studies), where his research assessed attempts to modify corals for climate change resilience,





he currently works on his PhD. He is based at Exeter University's Egenis Centre for the Study of Life Sciences and works at the KLI as a Visiting Fellow.

Understanding the Value of Coral Reefs

The guiding question for my PhD project is 'What role does value play in coral reef science?'. I am focused specifically on efforts to regenerate coral reefs. My aim is to produce an empirically-informed philosophical and sociological account of the roles played by value in coral reef science and practice. As well as theoretical analysis of the relevant scientific literature, I am also conducting interviews with coral scientists. My aim is not only to produce insights into why coral reefs are regarded as so important, but also into how science operates when its objects of study are considered valuable by scientists. This is an interdisciplinary project, combining elements of Philosophy, Sociology, Science and Technology Studies, and Marine Sciences.

Alice LACINY

(January – June 2022)



Alice Laciny is a former PhD student at the Department of Theoretical Biology at the University of Vienna and recently completed her thesis in the course of the WWTF project "Voluntary self-sacrifice in exploding ants: a mechanism to defend coevolved microbiomes?" at the Natural History Museum Vienna. She has been fascinated by insects from an early age and recently became president of the Austrian Entomologists' Association. Her scientific interests include myrmecology, parasitology, evolutionary developmental biology, and caste-characterization of social insects via morphological, statistical, and behavioral methods. Her postdoctoral work focuses on the influence of parasites on the morphology of ant hosts. After her postdoctoral fellowship at the KLI, Alice Laciny received a L' Oreal fellowship of the Austrian Academy of Sciences to study neurodiversity.

Neurodiversity and Anthropomorphism in Social Insect Research

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When researching social organisms, interpreting their societies and behaviors in ways that draw parallels between humans and animals is particularly tempting. Working on ants during my PhD and postdoc years, I have come to find that the highly complex colony structures and interactions of social insects are especially popular targets for anthropomorphic comparisons. Scientific papers and news stories frequently liken ants and bees to scaled-down humans, with analogies ranging from “suicide bomber” exploding ants to “compassionate” workers rescuing injured nestmates. While these comparisons do have value for illustrative purposes, not recognizing them as simplifications or metaphors can lead to inaccurate interpretations of scientific data, thereby hampering our understanding of these fascinating animals.

I therefore became interested in the following question: How may these phenomena be interpreted differently by scientists with a “different” kind of mindset? Scientists who, compared to the majority of the population, might feel less connected to the workings of human societies? In other words, how may the perceptions and approaches of neurodivergent researchers come into play within social insect research?

The neurodiversity movement frames neurodevelopmental conditions (e.g., autism spectrum disorder) as part of the naturally occurring variation of human development, and recognizes the strengths and benefits of neurodivergent individuals, as well as their needs for support. Previous research suggests that autistic individuals tend to show greater attention to detail and less or different tendency toward common cognitive biases than the neurotypical population. For scientific practice, this raises the question if they would therefore focus on smaller-scale phenomena at the (sub-)individual level, as opposed to the (sometimes highly anthropomorphic) society-level questions often targeted in current research. However, most studies on autism in academia still emphasize the deficits and difficulties associated with autistic traits, and represent research



about neurodivergent scientists, not by them. Bothered by this knowledge gap and craving an answer for my questions, an idea began to take shape.

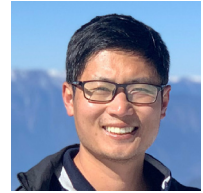
My years as a postdoctoral fellow at the KLI were devoted to investigating the eco-evo-devo relationships between ants and parasites. During this time, the KLI's diverse community of fellows brought with it important contacts and fruitful conversations that led me to view my purely zoological training through a critical lens and dare to ask more interdisciplinary research questions. This inspiring environment ultimately fostered and fueled the idea for the project at hand: In collaboration with Prof. Giorgia Silani (Department of Clinical and Health Psychology, University of Vienna) and KLI alumna Sidney Carls-Diamante, PhD (Zukunftskolleg / Philosophy Department, University of Konstanz), we aim to combine our expertise, and venture into uncharted territory.

In surveying an international sample of social insect scientists, we will explore how autistic traits may shape thought patterns and scientific approaches in the social insect research community. Results of the online survey study will be interpreted from the standpoints of entomology, cognitive autism research, and philosophy of psychiatry. We thereby hope to better understand the impacts of neurodiversity in science, and show how unique modes of perception may inform scientific understanding.

Currently, women are still underrepresented in entomology and often overlooked within the neurodivergent community, leading to numerous intersectional challenges. I am therefore especially glad about the successful funding of this research project by the ÖAW L'ORÉAL fellowship within the "For Women in Science" program from November 2021 to April 2022. In the long run, we hope to use this opportunity to raise awareness for the importance of diversity in academia, help to destigmatize autistic traits, and contribute to a more inclusive and accessible academic landscape.

Rongkun LIU

(March – October 2022)

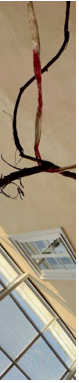


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Rongkun Liu is a PhD candidate in environmental social sciences at The Ohio State University. His research encompasses knowledge engagement, risk and resilience, and coupled human and natural systems in mountain environments, particularly the Himalayas. Over the past four years, he has been working with the International Centre for Integrated Mountain Development (ICIMOD) for his field research in Nepal and China. Rongkun holds a Bachelor's Degree in international relations from Peking University in China and graduated from the American University in Washington, D.C. with a Master's Degree in global environmental policy concentrating on environmental economic policies and international environmental cooperation. He has been awarded a KLI writing-up fellowship and subsequently a research grant from the International Centre for Integrated Mountain Development (ICIMOD) to complete his PhD thesis.

Citizen-Powered Knowledge Hybridization: Producing Situated Resilience for Mountain Communities

My project will focus on three manuscripts targeted for journal publication. In the first two, tentatively entitled “Knowledge, Knowledge Engagement, and Community Resilience in Complex Socio-ecological Systems,” and “Political Economy and Ecology of Resilience in Mountain Farming Communities: Making Decisions for or against Changes in the Arun Valley, Nepal,” I aim to challenge, critique and refine the theoretical basis of my research and seek to inform a truly engaged environmental anthropology from theories into actions at the science/society interface. The perspective of situatedness in resilience, or situated resilience, as a result of knowledge hybridization through situated learning will be probed through a case study of mountain communities in the Arun Valley, Nepal, based on my year-long environmental social scientific study of the valley as a designated socio-ecological



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system. The third manuscript, tentatively entitled “Citizen-powered Knowledge Hybridization: Outcomes, Potentials, and Reflections for Community Resilience Building,” will examine the degree to which hybrid knowledge is made possible and the ways in which this process of knowledge hybridization works to increase community resilience. The analysis will be based on the results of a quasinatural experiment that employs citizen-powered techniques in co-producing resilience-relevant knowledge endorsed by both professional scientists and local knowledge holders.

Meetings and Lectures

3



The KLI supports international workshops, symposia, and individual talks that are organized by the KLI or in cooperation with other institutions.

3.1 Altenberg Workshop in Theoretical Biology

The 'Altenberg Workshops' address key questions of biological theories. Each workshop is organized by leading experts of a certain field who invite a group of international specialists to the KLI. The Altenberg Workshops aim to make conceptual progress and to generate initiatives of a distinctly interdisciplinary nature. Further information concerning the participants and their presentations can be found on the KLI website. Workshops hosted at the new institute building in Klosterneuburg are continued as 'Altenberg Workshops.'



39th Altenberg Workshop in Theoretical Biology 21 – 24 June 2022

Agency in Living Systems: Conceptual Frameworks and Research Approaches

KLI, Klosterneuburg

Organization: Sonia E. Sultan (Wesleyan University, Middletown) and Armin Moczek (Indiana University, Bloomington)

Topic and Aims

Prevailing scientific approaches study organisms largely as passive objects, predetermined in development by their genetic makeup, and in evolution by an external selective environment. Alternatively, organisms may be investigated as potential agents of adaptive phenotypes and evolutionary innovation by virtue of (previously evolved) repertoires of regulatory, developmental and behavioral response. Can biological phenomena such as flexible regulatory pathways, individual plasticity, and formative tissue interactions be understood as sources of organismic agency? How can we rigorously define this property, and how can it inform a robust scientific theory? What range of biological mechanisms comprise relevant research foci, and what changes to experimental approaches are suggested by an agency view? A shift in scientific emphasis to these complex, indeterminate response properties promises a more nuanced and complete understanding of biological systems than prevailing gene-based approaches. An agency focus also promises new avenues for investigating ecological



62 resilience in the face of current environmental challenges on the one hand, and understanding and preventing human disease phenotypes, on the other. The proposed 3 1/2-day workshop will bring together evolutionary biologists (from multiple disciplines and study systems) as well as philosophers of biology to explore and critique biological agency as a research framework.

Program

JAN BAEDKE

Ruhr University Bochum, Germany

Are Organisms Different Agents than Other Biological Individuals? From the History of Philosophy to Evolutionary Biology

KATHLEEN DONOHUE

Duke University, USA

Evolutionary-Genetic Consequences of Biologically Altered Environments

DEBORAH M. GORDON

Stanford University, USA

The Ecology of Collective Behavior

NATHALIE FEINER

Lund University, Sweden

When Does Plasticity Take the Lead in Adaptive Evolution?

JUKKA JERNVALL

University of Helsinki, Finland

What Do Keystone Genes Tell Us about Agency?

KEVIN N. LALAND*, TOBIAS ULLER, NATHALIE FEINER,

SCOTT GILBERT and MARCUS FELDMAN

*University of St. Andrews, UK

The Causes of Selection

ARMIN P. MOCZEK and ERICA M. NADOLSKI

Indiana University, USA

Promises and Limits of an Agency Perspective in Evolutionary Developmental Biology

DANIEL J. NICHOLSON

George Mason University, USA

The Ghost of the Machine: Obstacles in the Path of a Theory of Organismic Agency

LAURA NUÑO DE LA ROSA

Complutense University of Madrid, Spain

Agency in Reproduction: The Case of Eutherian Pregnancy

DAVID PFENNIG

University of North Carolina, USA

**Assessment and the Evolution of Adaptive Plasticity:
An Overlooked Frontier**

EMILIE SNELL-ROOD

University of Minnesota, USA

**Agency in Biological and Bio-Inspired Systems: From Flying
Butterflies to Swarming Robots**

SONIA E. SULTAN

Wesleyan University, USA

**Unscripted Development as Organismal Agency:
Multi-Generation GxE Interaction**

MICHAEL J. WADE

Indiana University, USA

**Coupled Price Equations: When One Organism Is the
Environment of Another**

DENIS WALSH

University of Toronto, Canada

The Agency Perspective

RICHARD A. WATSON* and MICHAEL LEVIN

University of Southampton, UK

**A Working-Model for Transitions into Agency at Higher Levels
of Organisation**

FRANJO WEISSING

University of Groningen, Netherlands

Regulatory Networks Link Phenotypic Plasticity to Evolvability

TOBIAS ULLER

Lund University, Sweden

Agency, Goal-Oriented and Evolutionary Explanations

64 3.2 KLI Working Group

The KLI supports international groups of scholars in the life and sustainability sciences working on interdisciplinary projects to conduct their groundbreaking research at the institute. KLI Working Groups aim to develop ideas on a particular subject and generate suggestions for action. The participants have different scientific backgrounds and strive to develop specific, practical goals. Working Groups comprise 3 meetings over the course of one year and a half.



Working Group 21 – 25 March 2022

Evolutionary Approaches to Social-Ecological Change

KLI, Klosterneuburg

Organization: Tim Waring & Maja Schlüter

Participants: Tim Waring, Peter Sogaard Jorgensen, Maja Schlüter, Monique Borgerhoff Mulder, Guido Caniglia, Jamila Haider

Topic and Aims

Evolutionary and adaptive change are general processes that apply to a wide range of systems, including genetic, environmental and cultural systems. However, even though evolutionary thinking may assist in the study of social-ecological systems, applying evolutionary logic to social-ecological systems remains a challenge. A new KLI working group “Evolutionary Theory for Social-Ecological Change,” organized by Maja Schlüter and Tim Waring, aims to explore, extend, and enrich the connections between evolutionary theory and social-ecological change.

After delaying for two years, the first in-person meeting of the working group (March 21-25th, 2022) was successful, even with a half-sized crew. The first step of the process is to take the time and effort to do the careful and delicate work of understanding each other’s disciplines, theories, and fields. The goal was to put the two fields-- evolutionary biology and the sustainability sciences-- in relationship to each other, and to explore how they might interact with each other most usefully.

The group is now working on the necessary steps to enable a productive second meeting, and a perspective piece which will hopefully serve as a tool to advance their collective aims as well as clarify the next steps.



Working Group
26 – 30 September 2022

**Evolutionary Approaches
 to Social-Ecological Change**
KLI, Klosterneuburg

Organization: Tim Waring & Maja Schlüter

*Participants: Tim Waring, Maja Schlüter, Monique Borgerhoff Mulder,
 Thomas Currie, Carl Folke, Laurel Fogarty, Jamila Haider,
 Peter Jørgensen, Alessandro Tavoni, Guido Caniglia*

Topic and Aims

Another session of the working group “Evolutionary Theories for Social-Ecological Change” concluded after a productive week at the KLI. The goal of this visit was to bring group members together to finalize a perspective paper that explores what evolutionary theory could contribute to the field of Social-Ecological Systems thinking and to further expand on this work. Prof. Tim Waring, Prof. Maja Schlüter, Prof. Monique Borgerhoff Mulder, Dr. Peter Søggaard Jørgensen, and Dr. Guido Caniglia were able to reconnect following their previous visit to the institute in March earlier this year. Dr. Jamila Haider and Dr. Carl Folke could not attend in person, but joined the discussion digitally for a day. Three new researchers, Prof. Alessandro Tavoni, Prof. Thomas Currie, and Dr. Laurel Fogarty joined the team and brought a fresh perspective, new insights, and a heap of relevant expertise for the work that was laying ahead. Raf Jansen, a research assistant, helped with organizing the paper and documented the event.

What followed was a week of debate, hard work, and camaraderie, in which much progress was made. Led by Prof. Waring, the group developed an integrative paper on the process and challenges of integrating social-ecological systems research with evolutionary theory, and managed to get a significant amount of writing done. Furthermore, the spacious rooms and beautiful garden of the KLI made for a great location to have discussions in smaller groups, which helped generate fresh ideas for prospective papers.

66 **3.3 Cooperative Events**
Euro Evo Devo
31 May – 3 June 2022

Stazione Marittima of Naples, Italy

Scientific Committee: Gerd Müller (Chair), Annette Becker, Carlos Guerrero Bosagna, Fritson Galis, Rainer Melzer, Alessandro Minelli, Tom Van Dooren

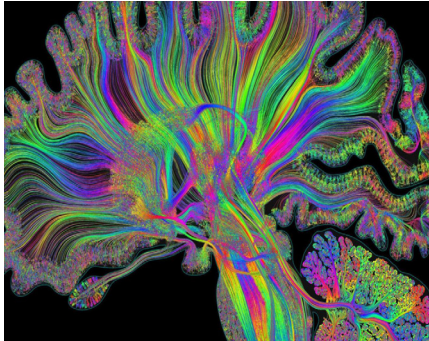
Topic

After a pandemic delay, the organizers of the 8th EuroEvoDevo 2022 were finally able to invite its participants to gather in-person at Naples, Italy (May 31-June 3rd, 2022). The KLI was present as both a sponsor of the conference and as attendees, with fellows and faculty giving presentations on the historical and philosophical aspects of evo-devo.

External faculty Laura Nuño de la Rosa reviewed the history of evolvability in her co-organized session “What have we learnt from 30 years of study on evolvability?” KLI president Gerd Müller and scientific advisory board member Manfred Laubichler also chaired a session on the history of evo-devo (“Institutional cradles of Evo-Devo”), wherein Gerd talked about the Vivarium (“The Biologische Versuchsanstalt in Vienna and its Significance for Evo-Devo”).

Taking a philosophical perspective, KLI fellow Cristina Villegas gave a talk on “Variational tendencies: development as an ultimate cause” in a session on evolvability (also co-organized by Nuño de la Rosa). Finally, KLI fellow Luis Aejandro Villanueva had a poster on “Social affordances and musical practices: an Evo-Devo approach to cultural evolution.”

“After all the postponements and obstacles for holding an in-person conference, this feels like a family reunion!” remarked Müller, the outgoing president of the EuroEvoDevo Society. EuroEvoDevo is the largest meeting on evo-devo, with a counterpart in the Americas (EvoDevo PanAm). With the pandemic still ongoing, the organizers took care to minimize risk and many of the participants stayed masked. Now that we can once again exchange ideas in person, the KLI looks forward to the next stage of evo-devo research facilitated by these meetings, with stronger links between conceptual, theoretical, historical, and empirical work.



**6th European Advanced
School in the Philosophy
of the Life Sciences
5 – 9 September 2022**

**Dealing with Complexity
in the Biological and
Biomedical Sciences**

University of Bordeaux, France

*Directors: Thomas Pradeu & Maël Lemoine (Bordeaux),
Marcel Weber (Geneva)*

*Senior Faculty: John Dupré & Sabina Leonelli (Exeter), Thomas Pradeu
& Maël Lemoine (Bordeaux), Philippe Huneman (Paris),
Thomas Reydon (Hannover), Isabella Sarto-Jackson
(KLI, Klosterneuburg), Jon Umerez (San Sebastian),
Marcel Weber (Geneva)*

Topic

Complexity, from genomes to ecosystems, is a fundamental characteristic of living systems. In dealing with complexity, the life and medical sciences have developed over the centuries a wide range of epistemological and methodological approaches as well as social and institutional configurations to organize and perform scientific work. The goal of this summer school is to bring together senior and junior researchers in the philosophy of life sciences to jointly reflect on and discuss:

- Epistemological and methodological issues in relation to complexity. We will look into the many practices developed in the biological, biomedical, and environmental sciences, in order to deal with the complexity of life. For instance, we will address the many roles that experiments, data, theories, models as well as heuristics, explanations or visualizations have played in the development of the life and medical sciences.
- Ontological and metaphysical issues in relation to complexity. We will discuss issues related with complex causation in living systems, mechanistic constitution, process thinking as well as modularity and robustness as ways to understand the main characteristics of living systems in the biological, biomedical, and environmental sciences.



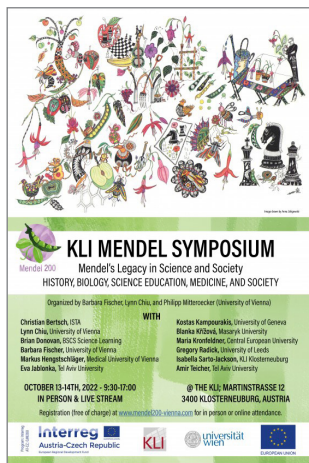
- 68
- Institutional, societal, and political dimensions of scientific work dealing with complexity. We will discuss social-organizational issues that emerge in relation to scientists' various approaches to deal with complexity in the biological, biomedical, and environmental sciences. For instance, we will talk about the emergence of inter and transdisciplinary research centers and consortia; the different -omics; different configurations of sharing research materials and results; real-world laboratories at the science-society interface or big-data labs from medicine to sustainability science.

The role that historians and philosophers of the life sciences can play in critically contributing to support scientific attempts to deal with complexity in the biological, biomedical, and environmental sciences.

Using examples from past and current science, during the summer school, we will analyze and reflect together on experimental, conceptual, and theoretical practices and strategies that scientists from different disciplines in the life and medical sciences have created when dealing with complex living systems. The organizers aim to assemble a community of scholars addressing these issues from a wide variety of perspectives and whose research focuses on wide diversity of topics in the life sciences broadly conceived. The following areas of work serve to illustrate the sorts of issues that are in focus for the summer school, but it should be emphasized that EASPLS 2022 welcomes inputs and ideas that are not limited to the issues mentioned below.

Historical and current examples of dealing with complexity in disciplines such as:

- Evolutionary biology and systematics, e.g. phylogenetic inference, evolutionary developmental biology
- Developmental biology, e.g., whole-organism lineage tracing
- Genetics and genomics, e.g., genome-wide association studies, integrative data-clustering
- Biological domains dealing with complex distributed systems, such as neuroscience and immunology
- Clinical research, e.g., randomized controlled trials, real-world evidence
- Cancer research, e.g., tumor typing
- Public Health, e.g. decision-making, policy-making
- Personalized medicine e.g. diagnostic tool, interventions, and drug development
- Molecular and systems biology, e.g., gene regulatory networks
- Synthetic biology and genome editing
- Conservation sciences, e.g. systematic conservation planning and biodiversity
- Climate change research, e.g., simulations, forecasting, scenarios, visioning
- Sustainability science, e.g. transdisciplinary projects, real-world experimentation



KLI Mendel Symposium 13 – 14 October 2022

Gregor Mendel's Legacy in Science and Society: History, Biology, Science education, Medicine, and Society

KLI, Klosterneuburg

Organizers: Barbara Fischer, Lynn Chiu & Philipp Mittrocker (University of Vienna)

Topic

For Gregor Johann Mendel's 200th anniversary, a public symposium was hosted at the KLI to reflect on his work and legacy. The long-reaching impact of Mendel's scientific work and different interpretations of "Mendelism" go beyond the academic discipline of genetics. The invited speakers shared their reflections on Mendel in the history of science, in the biological sciences, in the education and communication of science, as well as in medicine and society. The symposium was organized by the University of Vienna and took place in-person at the KLI with a live-stream.

Program

BARBARA FISCHER & LYNN CHIU
University of Vienna, Austria

Welcoming remarks

GERD MÜLLER
KLI, Klosterneuburg, Austria

Welcome address

BLANKA KRIZOVÁ
Mendel Museum, Brno, Czech Republic

G. J. Mendel – the Story of a Humble Genius

GREG RADICK
University of Leeds, UK

The Gregor Johann of history and the Mendel of faith: Reflections for a bicentennial



70 BARBARA FISCHER
University of Vienna, Austria
How Mendel became a scientist

AMIR TEICHER
Tel Aviv University, Israel
Social Mendelism

MARIA KRONFELDNER
Central European University, Vienna, Austria
Genes and us

EVA JABLONKA
Tel Aviv University, Israel
What is inherited and how?

ISABELLA SARTO-JACKSON
KLI, Klosterneuburg, Austria
Patchwork minds: how Mendelian, non-Mendelian, as well as non-genetic inheritance shape the human brain

LYNN CHIU
University of Vienna, Austria
Engaging with the science of inheritance in informal science spaces

CHRISTIAN BERTSCH
Institute of Science and Technology Austria (ISTA), Klosterneuburg, Austria
Teaching science as process and method of thinking – learnings from G. Mendel

BRIAN DONOVAN
Biological Sciences Curriculum Study (BSCS), Colorado Springs, USA
Genetics education needs to move beyond Mendel to combat white supremacy

KOSTAS KAMPOURAKIS
University of Geneva, Switzerland
Getting Mendel right: How the stereotypical teaching of Mendelian genetics in schools distorts both science and history

MARKUS HENGSTSCHLÄGER
Medical University of Vienna, Austria
Medical genetics - quo vadis?

3.4 KLI Special Event



Meet the Editors & Authors 13 January 2022

Seeing Clearly through COVID-19: Current and Future Questions for the History and Philosophy of the Life Sciences

KLI, Klosterneuburg, online

Organizer: Sabina Leonelli

Topic and Aims

Between 2020 and 2021, the journal *History and Philosophy of the Life Sciences* curated two topical collections on the historical, philosophical and social scientific context of COVID research. The resulting 57 papers provide a snapshot of initial reactions to the pandemic from authors located across the world, thereby exemplifying the diversity of historical, philosophical and social scientific perspectives and the role of such work as a crucial complement to biomedical and epidemiological research. This session introduces the collections and reflects on their continuing significance as the world spirals further into crisis. URL of the collections:

- (1) Biomedical knowledge in a time of COVID-19
- (2) Seeing clearly through COVID-19

Speakers:

BTHAJ AJANA is Professor of Ethics and Digital Culture at the department of Digital Humanities at King's College London. Her academic research is interdisciplinary in nature and focuses on the sociopolitical and ethical aspects of digital developments and their intersection with everyday cultures. She is the author of *Governing through Biometrics: The Biopolitics of Identity* (2013) and editor of *Self-Tracking: Empirical and Philosophical Investigations* (2018), *Metric Culture: Ontologies of Self-Tracking Practices* (2018) and *The Quantification of Bodies in Health: Multidisciplinary Perspectives* (2021).



72 GIOVANNI BONIOLO is Full Professor of Philosophy of Science and Medical Humanities, (Department of Neuroscience and Rehabilitation, University of Ferrara, Italy). Co-editor-in-chief with Sabina Leonelli of History and Philosophy of the Life Sciences. He works in the fields of the philosophy of biomedicine and its ethical implications.

LUKAS ENGELMANN is a Chancellor's Fellow and Senior Lecturer in the History and Sociology of Biomedicine at the University of Edinburgh. His research is currently supported by an ERC Starting grant and is concerned with the history of epidemiological reasoning in the twentieth century.

SABINA LEONELLI is Professor of Philosophy and History of Science at the University of Exeter, where she co-directs the Centre for the Study of the Life Sciences (Egenis). This year she is based in Berlin as a Fellow of the Wissenschaftskolleg. With Giovanni Boniolo, she is Editor-in-Chief of History and Philosophy of the Life Sciences.

JORDAN LIZ is an Assistant Professor of the Department of Philosophy at San José State University. His primary research focuses on contemporary genetic understandings of race and racial classifications; as well as studies on the genetic susceptibility of specific racial groups to certain diseases, such as cancer and diabetes. More recently, his research focuses on the impact of COVID-19 on racial minorities and other marginalized groups.

LISA ONAGA is a senior research scholar at the Max Planck Institute for the History of Science in Berlin and Associate Editor of History and Philosophy of the Life Sciences. She leads the "Proteins and Fibers" working group, which examines the multidisciplinary history of animal materials. Her forthcoming book, *Cocoon Cultures: The Entangled History of Silk and Science in Japan since 1840* examines how the control of the environment and genetics of an insect for industrial silk manufacture underpins the history of the life sciences in Japan.

SHISEI TEI is a neuroscience researcher in the Department of Psychiatry at Kyoto University (Japan) and a professor at Tokyo International University. He works on issues related to empathy, social cognition, self-consciousness, and behavioral flexibility.

JING XU is an assistant professor at the department of sociology at the Xi'an Jiaotong University in China. Dr. Xu received her Ph.D. degree in energy and environmental policy from University of Delaware in the United States. Her research focuses on Chinese environmental policy and governance.

3.5 KLI Colloquia

KLI Colloquia are informal, public talks that take place at the KLI in Klosterneuburg. Since the pandemic, KLI colloquia are carried out in a hybrid format, with speakers and fellows participating in-person at the KLI, while international guests joining virtually. Abstracts of the presentations and information about the lecturers can be found on the website of the institute.

SANDRA MITCHELL

University of Pittsburgh, USA

Through the Fractured Looking Glass

KIM DIAZ

University of Texas, El Paso, USA

Truth and Verification: Freire's Dialogical Method

GUISEPPE FEOLA

Utrecht University, Netherlands

The Schismogenic Hypothesis: Conceptualizing Grassroots Sustainability Transformation as a Process of Conscious Self-Determination by Differentiation

MIKA TOSCA

School of Art Institute of Chicago, USA

Imaging a Post-Climate-Crisis Future

CAITLIN McDONOUGH-GOLDSTEIN

University of Vienna, Austria

Dissecting Female: Towards a Queer Feminist Approach to Research on Sexual Reproduction

KEVIN LALA

University of St. Andrews, UK

EDI Matters: How Institutions Reap Tangible Benefits by Investing in Equality, Diversity and Inclusion

CHRISTIAN DORNINGER

KLI, Klosterneuburg, Austria

On the Sustainability of Human Niche Construction



74 LUANA POLISELI RAMOS
KLI, Klosterneuburg, Austria
Aesthetic Experiences and Ecological Understanding as Key for Sustainability Sciences

ISABELLA SARTO-JACKSON
KLI, Klosterneuburg, Austria
Das soziale Gehirn

MARCO VIANNA FRANCO
KLI, Klosterneuburg, Austria
A History of Ecological Economic Thought

CRISTINA VILLEGAS
KLI, Klosterneuburg, Austria
Development and Ultimate Causes

EÖRS SZATHMÁRY
Parmendies Foundation, Pöcking, Germany
Learning and Evolution

ROBERTO CAZZOLLA GATTI
University of Bologna, Italy
Self-Cognition with Sensorial Diversity

ORSOLYA BAJER-MOLNÁR
Medical University of Vienna, Austria
All Hands on Deck – Transdisciplinary Approaches to Coping with Emerging Infectious Diseases

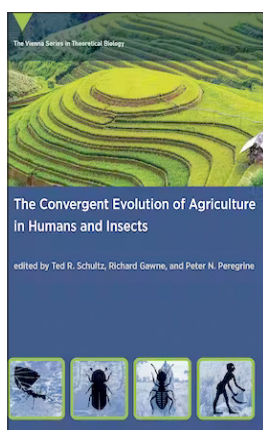
Publications



Scientific publications and presentations of KLI fellows and staff in 2022.

4.1 Vienna Series in Theoretical Biology

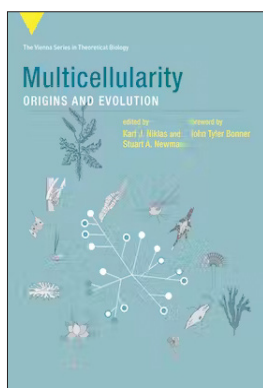
The 'Vienna Series' is published by The MIT Press as a book series. Books are mainly based on the Altenberg Workshops in Theoretical Biology and the resulting contributions and new syntheses. The book projects are subjected to a reviewing process by The MIT Press.



Volume 29:

TED R. SCHULTZ, RICHARD GAWNE &
PETER N. PEREGRIN

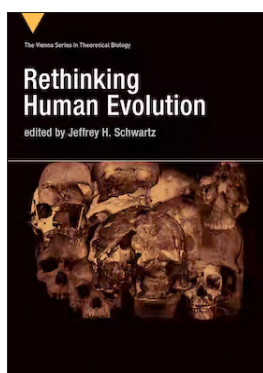
**The Convergent Evolution of Agriculture
in Humans and Insects**



Volume 30:

KARL J. NIKLAS & STUART A. NEWMAN

Multicellularity. Origins and Evolution



Volume 31:

JEFFREY H. SCHWARTZ

Rethinking Human Evolution



78 4.2 Professional Papers and Books

ACHARYA A.

Political Ecology of Small Things

PhD Thesis, The University of Edinburgh

EISOVÁ S, MENÉNDEZ LP, VELEMÍNSKY P, BRUNER E.

Craniovascular Variation in Four Southern South American Archaeological Samples

The Anatomical Record 306: 143-161

EL-HANI C, POLISELI L, LUDWIG D.

Beyond the Divide between Indigenous and Academic Knowledge: Causal and Mechanistic Explanations in a Brazilian Fishing Community

Studies in History and Philosophy of Science 91: 296-306

FISCHER D, FÜCKER S, SELM H, SUNDERMANN A.

Narrating Sustainability through Storytelling

Routledge, Taylor & Francis Group: Abingdon, Oxon

HICKEL J, DORNINGER C, WIELAND H, SUWANDI I.

Imperialist Appropriation in the World Economy: Drain from the Global South through Unequal Exchange, 1990–2015

Journal Global Environmental Change 73: 102467

HOBERG EP, BOEGER W, ARAUJO SBL, MOLNÁR O, FÖLDVÁRI G, GARDNER SL, JUARRERO A, KARCHENKO V, ORTIZ E, PREISER W, TRIVELLONE V, BROOKS DR.

An Introduction to the DAMA Protocol: Finding Them Before They Find Us

MANTER: Journal of Parasite Biodiversity, 24

HABETS D, HU C, SCHAFFER S.

This Extraordinary Rock

In: Lithium: States of Exhaustion (Diaz F, Kubrak A, Otero M, eds), pp. 12-16

Ediciones ARQ: Santiago

KNICKEL M.

Powering Collaboration and Co-Learning in Transdisciplinary Innovation-Oriented Research

PhD Thesis, University of Pisa

LANGER A, ROTH D, SANTER A, GRUBER J, WIZANY L, HASENAUER S, POKAN R, DABNICHKI P, TREVEN M, ZIMMEL S, SCHMOEGER M, WILLINGER U, GASSNER L, MATZLER W, ZACH H.

Climb up! Head up! Climbing Improves Posture in Parkinson's Disease. A Randomised Controlled Trial

Movement Disorders 37: S339–S339

LIU R.

Building Mountain-inspired Community Resilience: Combination, Engagement and Co-production

PhD Thesis, Ohio State University

MÉNDEZ M, VILLANUEVA HERNANDEZ LA.

Enfermedades en las Indias y Legitimación de la Aspiración Social criolla en la obra médica de Juan de Cárdenas

[Diseases in the Indies and the legitimacy of the social aspiration of criollos in the medical work of Juan de Cárdenas]

História Unisinos 23: 490-502

MENÉNDEZ LP.

Una introducción al concepto y cálculo del error de medición en estudios morfológicos

In: Avances en Antropología Forense (Quinto-Sánchez M, Gomez Valdez JA, eds), pp. 350-361

Universidad Nacional Autónoma de México: Mexico City

MENÉNDEZ LP, BUCK LT.

Evaluating Potential Proximate and Ultimate Causes of Phenotypic Change in the Human Skeleton over the Agricultural Transition

In: The Convergent Evolution of Agriculture in Humans and Insects (Schultz TR, Peregrine P, Gawne R, eds), pp. 225-256

MIT Press: Cambridge, MA

MOLNÁR O, HOBERG E, FÖLDVÁRI G, TRIVELLONE V, BROOKS DR.

The 3P Framework – A Comprehensive Approach to Coping with the Emerging Infectious Disease Crisis

MANTER: Journal of Parasite Biodiversity, 23



80 MOLNÁR O, KNICKEL M, MARIZZI C.

Turning Evolutionary Theory into Preventive Policies

MANTER: Journal of Parasite Biodiversity, 28

MSAFIRI MANGOLA S, LUND JR, SCHNORR SL, CRITTENDEN AN.

Ethical Microbiome Research with Indigenous Communities

Nature Microbiology 7: 749-756

POLISELI L, COUTINHO J, VIANA B, RUSSO F, EL-HANI C.

Philosophy of Science in Practice in Ecological Model Building

Biology & Philosophy 37: 21

POLISELI L, RUSSO F.

Philosophy of Science in Practice and Weak Scientism Together Apart

In: For and Against Scientism; Science, Methodology, and the Future of Philosophy (Mizrahi M, ed)

Roman & Littlefield: Lanham

RENCK V.

Where the River Meets the Sea: Partial Overlaps between two Onto-Epistemologies – Studies on the Biological and Ecological Knowledge of the Fishing Community of Siribinha, BA

PhD Thesis, Federal University of Bahia

RENCK V, APGAUA DMG, TNG DYP, BOLLETTIN P, LUDWIG D, EL-HANI C.

Cultural Consensus in Ethnotaxonomy – Lessons from a Fishing Community in Northeast Brazil

Journal of Ethnobiology and Ethnomedicine 18: 25

RENCK V, LUDWIG D, BOLLETTIN P, EL-HANI C.

Exploring Partial Overlaps between Knowledge Systems in a Brazilian Fishing Community

Human Ecology 50: 633–649

SARTO-JACKSON I.

The Making and Breaking of the Mind. How Social Interactions Shape the Human Mind

Vernon Press: Wilmington

SARTO-JACKSON I.

Elementarpädagogik: Kreativität und soziale Kognition als Grundstein für Bildung

<https://materie.at/gb/elementarpaedagogik-kreativitaet-und-soziale-kognition-als-grundstein-fuer-bildung/>

SCHLÜTER M, CANIGLIA G, ORACH K, BODIN O, MAGLIOCCA N, MEYFROIDT P, REYERS B.

Why Care about Theories? Innovative Ways of Theorizing in Sustainability Science

Current Opinions in Environmental Sustainability 54: 101154

SCHUSTER C, GOSEBERG T, ARNOLD J, SUNDERMANN A.

I Share Because of Who I Am: Values, Identities, Norms, and Attitudes Explain Sharing Intentions

The Journal of Social Psychology, 1-19

SPEE BTM, SLADKY R, FINGERHUT J, LACINY A, KRAUS C, CARLS-DIAMANTE S, BRÜCKE C, PELOWSKI M, TREVEN M.

Repeating Patterns: Predictive Processing Suggests an Aesthetic Learning Role of the Basal Ganglia in Repetitive Stereotyped Behaviors

Frontiers in Psychology 13, <https://doi.org/10.3389/fpsyg.2022.930293>

SUNDERMANN A, WEISER A, BARTH M.

Meaning-making in Higher Education for Sustainable Development: Undergraduates' Long-term Processes of Experiencing and Learning

Environmental Education Research 28: 1616-1634

VIANNA FRANCO MP.

Nicholas Georgescu-Roegen and the History of Ecological Economic Thought

Boletim da Sociedade Brasileira de Economia Ecológica 41: 27-34

VIANNA FRANCO MP, MISSEMER A.

A History of Ecological Economic Thought

Routledge: London & New York

VIANNA FRANCO MP, MISSEMER A.

Writing the History of Ecological Economic Thought: Challenges and Perspective

Revista Iberoamericana de Economía Ecológica 35: 1-18



- 82 VIANNA FRANCO MP, MOLNÁR O, DORNINGER C, LACINY A, TREVEN M, WEGER J, ALBUQUERQUE EM, CAZZOLLA GATTI R, HERNANDEZ AV, JAKAB M, MARIZZI C, MENENDEZ LP, POLISELI L, RODRIGUEZ H, CANIGLIA G.

Diversity Regained: Precautionary Approaches to COVID-19 as a Phenomenon of the Total Environment

Science of the Total Environment 85: 154029

VIANNA FRANCO MP, RIBEIRO LC, ALBUQUERQUE EM.

Beyond Random Causes: Harmonic Analysis of Business Cycles at the Moscow Conuncture Institute

Journal of the History of Economic Thought, 44: 456-476

WEITZER J, BIRMANN BM, STEFFELBAUER I, BERTAU B, ZENK L, CANIGLIA G, LAUBICHLER MD, STEINER G, SCHERNHAMMER E.

Willingness to Receive an Annual COVID-19 Booster Vaccine in the German-speaking D-A-CH Region in Europe: A Cross-Sectional Study

The Lancet Regional Health-Europe 18: 100414

4.3 Forthcoming Publications

BANGAL P, SRIDHAR H.

Revisiting the „Nuclear Species“ Concept: Do We Really Know what We Think We Know?

Philosophical Transactions of the Royal Society B

CANIGLIA G, FREETH R, LUEDERITZ C, LEVENTON J, WEST SP, JOHN B, PEUKERT D, MARTIN-LOPEZ B, VON WEHRDEN H, LANG DJ, VON WIRTH T, FAZEY I, SCHLÜTER M, VOGEL C.

Practical Wisdom and Virtue Ethics for Knowledge Co-Production in Sustainability Science

Nature Sustainability

CANIGLIA G, RUSSO F.

How is Who: Evidence as Clues for Action through Participation in Sustainability Science and Public Health Research

History and Philosophy of the Life Sciences

CANIGLIA G, SCHLÜTER M.

**Practical Causal Knowledge for Sustainability:
Towards an Epistemological Account**

In: Routledge Handbook of Causality (Illari P, Russo F, eds.)
Routledge: London & New York

CANIGLIA G, VOGEL C.

**On Being Oriented: Queering Transdisciplinary Sustainability
Science in Theory and in Practice**

GAIA. Ecological Perspectives for Science and Society

FÁBREGAS-TEJEDA A.

**Give In to Our Beastly Nature, or How the “Pop Science” of
What Makes Us Human Rose to Prominence**

H-Sci-Med-Tech, H-Net Reviews

<https://www.h-net.org/reviews/showrev.php?id=56881>

FÁBREGAS-TEJEDA A.

Re-negotiating Organism-Environment Separation

Synthese

FÁBREGAS-TEJEDA A, MARTÍN-VILLUENDAS M.

**Philosophy of Organismal Biology: From Ontogeny to Ecology
and Evolution**

Bilingual Special issue in ArtefaCToS.

Revista de Estudios de la ciencia y la tecnología

FÁBREGAS-TEJEDA A., MARTÍN-VILLUENDAS M.

Introduction: What is the Philosophy of Organismal Biology?

ArtefaCToS. Revista de Estudios de la ciencia y la tecnología

HU C.

Levigators

In: Deposition (Lund K, ed)

Mousse Publishing: Milan

HU C.

Corporation

In: Keywords for a New Politics of Energy and Environment (Wenzel J,
Szeman I, eds)

West Virginia University Press: Morgantown



84 JOHN B, CANIGLIA G.

Das glokale Curriculum – Interkulturelle Begegnungen durch Digitalisierung und Virtualität

[The glocal curriculum: Intercultural encounters through digitalization and the virtual]

In: Nachhaltigkeit und Bildung (Barth M, Fischer D, Michelsen E, eds)
Universitätsverlag Göttingen: Dortmund

LALA KN, O'BRIEN MJ.

The Cultural Contribution to Evolvability

PaleoAnthropology

LALA KN, O'BRIEN MJ.

Culture and Evolvability: A Brief Archaeological Perspective

Journal of Archaeological Method and Theory

LALA KN, ULLER T, FEINER N, FELDMAN MW, GILBERT SF.

Evolution Evolving: The Developmental Origins of Adaptation and Biodiversity

Princeton University Press: Princeton

MANGINI G, RUTT C, SRIDHAR H, BUITRON G, MUÑOZ J, ROBINSON S, ZARCO A, FANJUL ME, FERNÁNDEZ-ARELLANO G, SHUANG X, CAMERLENGHI E.

A Classification Scheme for Mixed-Species Bird Flocks

Philosophical Transactions of the Royal Society B

MERMANS E.

Le concept classique d'espèce clé de voûte et les éthiques écocentrées. Pour une approche pragmatiste et féministe du rôle des valeurs dans les sciences de l'écologie

PhD Thesis, Université de Montréal & Université Paris 1 Panthéon-Sorbonne

MISSEMER A, VIANNA FRANCO MP.

Municipal Housekeeping and the Origins of the Economics of the Urban Environment (1900s-1920s)

Review of Political Economy

POLISELI L.

Artes y experiencias estéticas: um caleidoscópio metodológico para as ciências

[Arts and aesthetic experiences: a methodological kaleidoscope for sciences]

In: Re-imaginando STEM desde la diversidad

[Re-imagining STEM from a diversity perspective]

(Lopez DE, Avalos JJ, Zepeda AD, Franco EG, eds)

Editora Universidad Autónoma de Querétaro: Santiago de Querétaro

POLISELI L, CANIGLIA G.

Inter and Transdisciplinary Reasoning in Arts-Sciences-Humanities Interventions on Climate Change

Sustainability Science

RENCK V, LUDWIG D, BOLLETTIN P, REIS-FILHOS, JA, POLISELI L, EL-HANI CN.

Taking Fisher's Knowledge and Their Implications to Fisheries Policy Seriously

Ecology & Society

RENCK V, LUDWIG D, DE JESUS SANTOS I, DOS SANTOS VC, DA CONCEIÇÃO FDA, DE ARAÚJO NA, DOS SANTOS CC, OLIVEIRA VJ, BOLLETTIN P, REIS-FILHO JA, POLISELI L, EL-HANI C.

Conhecimento Pesqueiro e o Defeso: Preenchendo uma Lacuna Necessária

Ethnobiology and Conservation

SARTO-JACKSON I.

Neuroplastizität und soziale Bindungen

In: Professionelle Bindungs- und Beziehungsgestaltung – interdisziplinäre Perspektiven

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The Politics of "Nature": An Interview with Bill Adams

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Complexity Literacy for a Sustainable Digital Transition: Cases and Arguments from Transdisciplinary Education Programs

In: Digitalization, New Media, and Education for Sustainable Development: Global and National Perspectives and Actions (Keller L, Michelsen G, Duer M, Bachri S, Zint M, eds)

IGI Global: Hershey

TREVEN M.

Are Neurodegenerative Disorders Causing Characteristic Changes in Visual Artwork?

Commentary on 'Can We Really "Read" Art to See the Changing Brain?'

by Pelowski M, Spee BTM, Arato J, Dörflinger F, Ishizu T, Richard A.

Physics of Life Reviews 44: 102-104

VIANNA FRANCO MP.

Discounting (incl. discount rate and hyperbolic discounting)

In: Dictionary of Ecological Economics (Haddad B, Solomon B, eds)

Edward Elgar Publishing: Cheltenham

VIANNA FRANCO MP.

Social provisioning

In: Dictionary of Ecological Economics (Haddad B, Solomon B, eds)

Edward Elgar Publishing: Cheltenham

VILLANUEVA HERNANDEZ LA.

Acoustic Affordances in the Construction of Sociomaterial Niches.

A Developmental Approach

Biology & Philosophy

VILLANUEVA HERNANDEZ LA., VILLEGAS C.

Procesos de transmisión musical: el son jarocho y el enfoque evo-devo de reproducción cultural

Universidad de Guadalajara: Guadalajara

VILLEGAS C, TRIVIÑO V.

Tipología y disposiciones del organismo en la evo-devo: una aproximación metafísica

ArtefaCToS

VILLEGAS C, LOVEL A, NUÑO DE LA ROSA GARCÍA L, BRIGANDT I,
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**Conceptual Roles of Evolvability across Evolutionary Biology:
Between Diversity and Unification**

In: Evolvability (Hansen T, Houle D, Pavlicev M, Pélabon C, eds)
The Vienna Series in Theoretical Biology, MIT Press: Cambridge

WHITE S, MENÉNDEZ LP.

Biosocial Complexity and the Skull

In: Behaviour in our Bones (Hirst C, ed)
Elsevier: Amsterdam



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**Volume 17, Issue 1:
Thematic Issue on Conceptualizing the Environment in
Natural Sciences**

PONTAROTTI G, DUSSAULT AC, MERLIN F.

Conceptualizing the Environment in Natural Sciences: Guest Editorial

TAYLAN F.

**The Rise of the “Environment”: Lamarckian Environmentalism Between
Life Sciences and Social Philosophy**

CAPONI G.

The Darwinian Turn in the Understanding of Biological Environment

PONTAROTTI G.

Environmental Inheritance: Conceptual Ambiguities and Theoretical Issues

DUSSAULT AC.

**Functionalism without Selectionism: Charles Elton’s “Functional” Niche
and the Concept of Ecological Function**

WALSH D.

Environment as Abstraction

DESMOND H.

Adapting to Environmental Heterogeneity: Selection and Radiation

HUNEMAN P.

**What Is It Like To Be an Environment? A Semantic and Epistemological
Inquiry**

Volume 17, Issue 2:

NEWMAN SA.

Introducing “Critical Concepts in Biological Theory”

FUSCO G.

Serial Homology

SOLÉ R.

Revisiting Leigh Van Valen’s “A New Evolutionary Law” (1973)

DOWNES SM, TURKHEIMER E.

An Early History of the Heritability Coefficient Applied to Humans (1918–1960)

LYONS-WEILER.

Who are We, and Who (or What) Do We Want to Become? An Evolutionary Perspective on Biotransformative Technologies

SCHAUER D.

Reputation for Competence: Social Learning Mechanisms Create an Incentive to Help Others

VEIT W.

Scaffolding Natural Selection**Volume 17, Issue 3:**

NIKLAS KJ, KUTSCHERA U.

Revisiting Julius Sachs’s “Physiological Notes: II. Contributions to the Theory of the Cell. a) Energids and Cells” (1892)

COLLARD M, PLOMP KA, DOBNEY KM, EVIN M, BEEN E, GNANALINGHAM K, FERREIRA P, SIMIC M, SELLERS W.

Acquired Spinal Conditions in Evolutionary Perspective: Updating a Classic Hypothesis



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A Second-Personal Approach to the Evolution of Morality

ROSEMAN CC, KAPLAN JM.

Reliability is No Vice: Environmental Variance and Human Agency

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A New Paradigm for Cancer?

SACHS J.

Physiological Notes: II. Contributions to the Theory of the Cell.

a) Energids and Cells

Volume 17, Issue 4:

LAMM E, VEIGL SJ.

Back to Chromatin: ENCODE and the Dynamic Epigenome

ASMA ST.

Imagination: A New Foundation for the Science of Mind

AHARONI R.

The Origin of Antithetical Expressions

NANJUNDIAH V, GEETA R, SUSLOV VV.

Revisiting N.I. Vavilov's "The Law of Homologous Series in Variation" (1922)

BOURRAT P.

A New Set of Criteria for Units of Selection

VEIT W.

The Origins of Consciousness or the War of the Five Dimensions

VEIT W.

Towards a Comparative Study of Animal Consciousness

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DANIEL BROOKS
JUDITH BURKART
LAUREANO CASTRO
MATHIEU CHARBONNEAU
MARK COLLARD
CHRISTOPHER DONOHUE
MARCUS FELDMAN
ALAN FISKE
STUART GLENNAN
JEAN-BAPTISTE GRODWOHL
DAVID HAIG
ÁNGEL JIMÉNEZ
ÇAGLAR KARACA
FRED KEIJZER
LOGAN KISTLER
JONATHAN KLASSEN
GREGORY KOHN
KALEVI KULL
EHUD LAMM
ROBERT LICKLITER
ELISABETH LLOYD
STEPHEN MANN
RICHARD MICHOD
KEVIN MITCHELL
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DAVID NASH
AURORA NEDELCU
JANKO NEŠIĆ
DANIEL NICHOLSON
PETER NONACS
DAVID PEÑA-GUZMÁN
MAXIM RAGINSKY
LUCIA REGOLIN
LUKE ROELOFS
JOAN ROUGHGARDEN
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KATRIN SCHAEFER
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DAVID SPURRETT
ULRICH STEGMANN
KIM STERELNY
JÖRG STOLZ
CARLOS DAVID SUÁREZ PASCAL
BARTLOMIEJ SWIATCZAK
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MICHAEL TOMASELLO
ANTONELLA TRAMACERE
ERIC TURKHEIMER
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CATHERINE WILSON



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**Narratives of Practical Wisdom: For an Ethics of Knowledge
Co-production beyond Rules**

KLASIKA Workshop, Institute of Advanced Sustainability Studies, Potsdam

CANIGLIA G.

**Evidence as Clues for Action in Participatory Public Health Research and
Sustainability Science**

Research Group on Medical Corona Science, Bertalanffy Center, Vienna

CANIGLIA G.

**Normative Complexities: Virtue Ethics and Practical Wisdom for
Knowledge Co-Production**

Leibniz Center for Tropical Marine Research, Bremen

CANIGLIA G.

Normative Complexities: Lessons from Ancient Philosophy

Leibniz Center for Ecological Urban and Regional Development, Dresden

CANIGLIA G, RUSSO F.

Empowering with Evidence in Sustainability Science

American Association for the Advancement of Science (AAAS), online

FÁBREGAS-TEJEDA A.

Symmetries and Asymmetries of the Organism-Environment Relationship

The Place of the Organism in Biology and Medicine, 10th RUB-Workshop on the History and Philosophy of the Life Sciences, Ruhr University Bochum

FÁBREGAS-TEJEDA A.

**Filosofía de la explicación y el debate en torno a la Síntesis
Evolutiva Extendida**

[Philosophy of Explanation and the Extended Evolutionary
Synthesis Debate]

Meeting of the Ibero-American Association of Philosophy of Biology
Symposium "Epistemological Discussions on Current Developments in
Evolutionary Biology," online

FÁBREGAS-TEJEDA A.

¿Qué es el ambiente de un organismo cuando se postula como relatum? Una exploración metafísica y epistemológica?

[What is the environment of an organism as its relatum? A metaphysical and epistemological exploration]

BioKoinos Research Seminar, Complutense University of Madrid

HU C.

On Mitigation

Mitigation as Meaning Conference, University of Pennsylvania

JONES E.

What Role Does Value Play in Socio-Ecological Accounts of Science?

International Conference on Engaging Ethics and Epistemology in Science, University of Hannover

JONES E.

What Role Does Value Play in Socio-Ecological Accounts of Science?

6th EASPLS Summer School: Dealing with Complexity in the Biological and Biomedical Sciences, University of Bordeaux

JONES E.

Corals as Service Providers: Ecosystem Services and Value Relations between Coral Scientists and Corals

European Association for the Study of Science and Technology Conference, Complutense University of Madrid

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What Does It Mean to Say Corals Have Value? Variation, Value and Baselines in Coral Reef Systems

International Coral Reef Society, University of Bremen

JONES E.

Perspectivism and Multi-Species Epistemology: The Case of Coral Reefs

Society for the Philosophy of Science in Practice Conference, University of Ghent

JONES E.

Ecosystem Regeneration and Coral Reefs

International Coral Reef Society, University of Bremen



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Evolvability and the Function of Inheritance

Blodwen Lloyd Binns lecture, Glasgow University

MOLNÁR O.

The DAMA Protocol – Implementing Evolution into Public Health to Prevent Epidemics

2nd World Congress on Climate Change and Environmental Health, Berlin

MOLNÁR O.

PreAction Plan - Mobilizing Evolution in Public Health Disease Prevention

4th UNESCO MOST Winter School, Truth and Consequences, Institute of Advanced Studies Köszeg

POLISELI L.

Aesthetics in-of Science, Scientific Understanding, and Other Things

Summer School Representation in Arts and Science, University of Vienna

POLISELI L.

Ecologia funcional e teoria organizacional das funções ecológicas

[Functional Ecology and Organizational Theory of Ecological Functions]
INCT-INTREE, Federal University of Bahia (UFBA)

POLISELI L.

Aesthetic Experiences and Ecological Understanding as Key for Sustainability Sciences?

6th EASPLS Summer School: Dealing with Complexity in the Biological and Biomedical Sciences, University of Bordeaux

SARTO-JACKSON I.

Cognitive Biology

Comenius University Bratislava

SARTO-JACKSON I.

Biocognition: Knowledge Accumulation in Biological Systems

MeiCogSci Lecture Series, University of Vienna

SARTO-JACKSON I.

History of Neuroscience through the Nobel prizes

Guest Lecture, Medical University of Vienna

SARTO-JACKSON I.

Complexity and the Tyranny of Scales

6th EASPLS Summer School: Dealing with Complexity in the Biological and Biomedical Sciences, University of Bordeaux

SARTO-JACKSON I.

Commentary on “Why (Naturalistic) Metaphysics Matters for Science”

by Dupré J.

6th EASPLS Summer School: Dealing with Complexity in the Biological and Biomedical Sciences, University of Bordeaux

SARTO-JACKSON I.

**How Adverse Social Interactions Shape the Human Mind –
A Transgenerational Perspective**

5th Annual Meeting of the Deep South Philosophy & Neuroscience Workgroup, Philosophy & Neuroscience @ The Gulf V, Pensacola

SARTO-JACKSON I.

Complexity-Driven Interdisciplinarity: Promises and Pitfalls

Workshop, Interdisciplinarity in Neuroscience: What are the Issues?
University of Bordeaux

SARTO-JACKSON I.

**The Making and Breaking of Minds. How Social Interactions
Shape the Human Mind**

Colloquium, Faculty of Psychology, University of Vienna

SARTO-JACKSON I.

Die Entwicklung des menschlichen Gehirns in der Evolution

Symposium “Wechselwirkungen und Zufall in der Evolution”, Club of Vienna,
Natural History Museum, Vienna

SARTO-JACKSON I.

Neuroplastizität und soziale Bindungen

Meeting of Working Group for Symposium 2023, University of Applied Sciences
and Arts, Dortmund

SARTO-JACKSON I.

Die Evolution des sozialen Gehirns

Club of Vienna, IG Architektur, Vienna



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Identität und Gehirn

Gesprächswoche des Forums St. Stephan, Stift St. Georgen am Längsee

SARTO-JACKSON I.

Was macht sozialer Druck mit unserem Gehirn?

Urania, Vienna

SARTO-JACKSON I.

Warum ich weiß, was du fühlst

Brain Awareness Week 2022, Medical University of Vienna, online

SARTO-JACKSON I.

Recruiting Processes in Academic Philosophy

The Pragmatic Academic Series, University of Vienna, online

SARTO-JACKSON I, KUNZE M, BRANCHI I.

Are We Equipped to Work Interdisciplinarily? – On the Lack of Philosophical Education of Neuroscientists

Network Event at FENS Forum of Neuroscience, Paris

TREVEN M.

Basal Ganglia Function in Aesthetic Experience and Creative Expression: Insights for Understanding Repetitive Stereotyped Behaviours

International Conference "Interdisciplinary Perspectives on Beauty and Change," University of Turin

VIANNA FRANCO MP.

Scientific Utopianism in Viennese Late Enlightenment: Josef Popper-Lynkeus's In-Kind Social Program as Universal Basic Income

Annual Conference of the Italian Association for the History of Political Economy, Tuscia University, Viterbo

VIANNA FRANCO MP.

A History of Ecological Economic Thought

Economics Seminar Series, Institute of Management Studies, Goldsmiths, University of London

VIANNA FRANCO MP.

A History of Ecological Economic Thought

Book Launch Seminar, Economics Department, SOAS, University of London

VIANNA FRANCO MP.

A History of Ecological Economic Thought

Environmental Colloquium, Department of International Politics, University of Vienna

VILLANUEVA HERNANDEZ LA.

The Role of Music in the Construction of Sociomaterial Niches

6th EASPLS Summer School: Dealing with Complexity in the Biological and Biomedical Sciences, University of Bordeaux

VILLANUEVA HERNANDEZ LA.

Interconnectedness and Artefactual Interactions in Music:

The Case of Fandango Jarocho in Mexico

Symposium Music Togetherness, University for Music and Performing Arts, Vienna

VILLANUEVA HERNANDEZ LA.

Social Affordances in the Transmission and Evolution of Music:

A Theoretical Evo-Devo Approach

Lab-Visit of the Cognitive Science Master Students of the University of Vienna, KLI, Klosterneuburg

VILLANUEVA HERNANDEZ LA.

Sounds Worlds beyond the Western Boundaries

Visiones de la Tierra. Debates de investigación desde la lengua inglesa para mujeres indígenas, Universidad de Caldas & University of Vienna, online

VILLANUEVA HERNANDEZ LA.

Co-Dependent Processes of Stability and Variability of Musical Traits:

An Evo Devo Approach to Music Transmission

Cultural Evolution Society Conference, Aarhus University, online

VILLANUEVA HERNANDEZ LA.

Prácticas musicales, activismo político y atrincheramiento de formas de vida comunitarias

Symposium of the International Council for Traditional Music ICTM, Applied Ethnomusicology, Rio de Janeiro, online



98 VILLANUEVA HERNANDEZ LA.

Diálogos sonoros entre lo local y lo global. Hacia un modelo explicativo de los procesos de estabilidad y cambio musical

Symposium of the International Council for Traditional Music ICTM, Music and Dance in Latin America and the Caribbean, Universidad Alberto Hurtado, Santiago de Chile, online

VILLANUEVA HERNANDEZ LA, VILLEGAS C.

The Reproduction of Multimodal Communication Systems. An Evo-Devo Model of Music Transmission

International Conference on Language, Culture and Mind, University of Almeria

VILLANUEVA HERNANDEZ LA, VILLEGAS C.

Transmisión musical. El son mexicano y el enfoque evo-devo de reproducción cultural

II Coloquio Internacional. El son mexicano en perspectiva, Centro Veracruzano de las Artes "Hugo Argüelles," Puerto de Veracruz

VILLEGAS C.

The Reference Class Problem of Variation

9th Biennial Meeting of the Society for Philosophy of Science in Practice (SPSP), University of Ghent

VILLEGAS C.

Variational Tendencies: Development as an Ultimate Cause

8th Meeting of the European Society for Evolutionary Developmental Biology (Euro Evo Devo 2022), Stazione Marittima of Naples

VILLEGAS C.

Causalismo variacional: las propensiones de la devo-evo

[Variational Causalism: Devo-evo Propensities]

Seminario del Instituto de Estudios de la Ciencia y Tecnología (ECyT), Universidad de Salamanca

Further Activities



Many activities of the KLI support its mission and vision. Some representative activities are listed here.

5.1 Grants & Prizes



Horizon Europe Framework Programme (HORIZON)
Call: Sustainable, Secure and Competitive Energy Supply
 Guido CANIGLIA (KLI)

Co-Applicants: Julia MILDORFOVA LEVENTON (Czechglobe), Taliah DOMMERHOLT (Stichting Isocarp Institute Center of Urban Excellence), Kimberly MAJOR (Biobased Creations), Nyke SCHULP (Stichting VU), Tomas MILDORF (PLAN4ALL ZS), Vincent O'CONNELL (Peri-Urban Regions Platform Europe), Sandra SUMANE (Nodibinajums Baltic Studies Centre), Tadej BEVK (University of Ljubljana), Andrea BASSI (Knowledge SRL), Piotr MAGNUSZEWSKI (Stowarzyszenie Centrum Rozwiazan Systemowych), Anders WASTFELT (Stockholm University), Simeon VANO (University Constantine the Philosopher in Nitra), Jens NEWIG (Leuphana Universität Lüneburg), Monica LAZZARONI (Province of Lucca), Dunja MAHNE (RRA Zeleni Kras), Anja BRULL (Euregio Maas-Rhein), Elzbieta KOZUBEK (Wojewodztwo Mazowieckie), Paul VAN DER SLUYS (Vlaamse Landmaatschappij), Heidrun MOSCHITZ (Verein Parc Ela), Patrik REICHL (Regionalni rozvojova agentura jizni Moravy), Sandrine LACAZE (Ile de France), Deborah FOX (Surrey County Council)

PLUS Change

PLUS Change brings together 23 institutions from across Europe including 5 Universities, 5 research institutes, 3 stakeholder network organisations, 1 performing arts collective, and 9 practice partners representing regional planning and land management authorities and organisations. The objectives directly address the call with an aim to create land use strategies and decision-making processes that meet climate, biodiversity and human well-being objectives of sustainability, and to develop interventions that leverage political, economic, societal, material and cultural contexts to achieve these strategies, by involving actors at multiple decision-making levels (individual, land management, planning, policy). Activities include land use modelling (including historical and future trajectories of change), systems mapping, causal loop diagrams, performing arts approaches, randomized controlled trials of behaviour change, sociological



102 surveys, and policy and governance reviews. All activities brought together in an integrated research design that draws on their different contributions to a holistic approach to understand multi-scale land use systems across a diversity of socioeconomic and biogeographical contexts, and create usable tools for land managers, users, planners and policy makers. The project is anchored in, and integrated through, 11 location-based cases for co-creation, and in a high-level multiplier cluster to identify challenges and impacts at EU and Global levels. Outputs include recommendations of co-designed and tested interventions to unlock behavioural, structural and procedural changes to achieve identified land use strategies; and a toolkit to support land use planners in enacting these interventions, including knowledge training, a planning dashboard and simulation tools, and methods for engaging citizens and land managers in behaviour change.

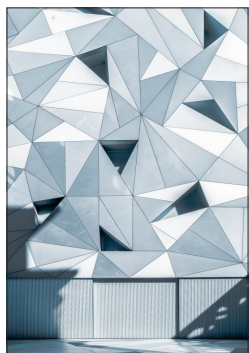


Call to Scientific Employment Stimulus – 4th Edition, Fundação para a Ciência e a Tecnologia (FCT)

CRISTINA VILLEGAS (KLI)

KLI Postdoctoral Fellow Cristina Villegas received a research contract of the University of Lisbon (CFCUL) funded by the Fundação para a Ciência e a Tecnologia (FCT) of the Portuguese government. She will continue her work on explanation and probabilistic models in evolutionary biology.

5.2 Events (Co-)organized by KLI Fellows



Reading Group

Vienna Science Studies Laboratory

Organizers: LAURA MENATTI (KLI), SOPHIE VEIGL (University of Vienna), STEPHANIA DONAYRE PIMENTEL (Central European University), Maria FEDOROVA (Central European University)

Directors: Guido CANIGLIA (KLI), Maria KRONFELDNER (CEU), Martin KUSCH (University of Vienna)

The Vienna Science Studies Laboratory is a Vienna-based group of multi-disciplinary researchers interested in the diverse topics and issues of science, technology, and medicine studies. Originally an initiative from members of the CEU Science Studies Research Group, the Laboratory's activities debuted in Budapest in 2017 and continued till 2019, when CEU started to move to Vienna. It was planned to relaunch things from 2021 on based in Vienna, but the pandemic came in the way. Some of the organizing team have used the pandemic to create, with further partners, a video channel on socially engaged philosophy and how it helps to understand science (SEPh). In 2022, the Lab was re-launched with Vienna partners, now that physical meetings can be realized in full delight again.



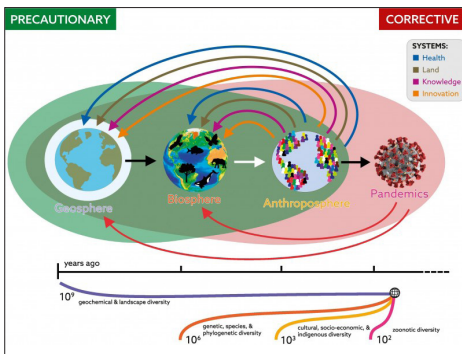
Reading Group

Agents and Agency

Organizers: ALEJANDRO FÁBREGAS-TEJEDA (KLI), DAVID HARRISON (KLI), LAUREN LAMBERT (KLI), JONATAN PALMBLAD (KLI), ILVANNA SÁLAS LEÓN (KLI)

This reading group is loosely but seriously centered around agency. We look at texts that either use the term or can be read with agency as a lens. The focus includes but is not limited to ideas in social anthropology and the philosophy of biology, and we aim at attaining interdisciplinary insights on the matter. The group is led by the KLI Writing Up fellows.

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**Internal Working Group
Diversity Regained:
Precautionary Approaches to
COVID-19 as a Phenomenon
of the Total Environment**

*Organizers: MARCO P. VIANNA FRANCO
(KLI), ORSOLYA BAJER-MÓLNAR (KLI)*

Two large-scale collaborations emerged from KLI fellows during lockdown and social isolation. “Diversity Lost: COVID-19 as a phenomenon of the total environment” (2021) diagnosed the pandemic as stemming from the loss of diversity in the biosphere, the geosphere, and the anthroposphere. “Diversity Regained: Precautionary approaches to COVID-19 as a phenomenon of the total environment” (2022) followed up on this diagnosis to propose precautionary and systemic approaches to proactively meet future global challenges.

A conceptual piece by Caniglia et al. (2021) argues that COVID-19 heralds a new epistemology of science for the public good. On vaccine hesitancy in Austria, Schernhammer et al. (2022) looked at trust in government while Lehner et al. (2021) examined the attitudes of midwives. Early on, Weitzer et al. (2021) investigated the mitigation measures related to perceived productivity in the first 50 days.

Arguing against the lab-leak hypothesis in Cazzolla Gatti (2020), Roberto diagnosed the outbreak as a symptom of Gaia’s sickness and proposed urgent actions to conserve and protect wildlife in Turcios-Casco (Cazzolla Gatti 2020). Following his work on the health effects of pollution in Italy, Cazzolla Gatti et al. (2020) also revealed a connection between air pollution and SARS-CoV-2 mortality and infectivity.



Research Mini-Symposium

15 November 2022

*KLI Klosterneuburg
Organizers: KLI Fellows*

In this mini-symposium, KLI fellows practiced pitching and sharing their research. Each fellow presented an elevator speech of their work in four minutes. Instead of giving each other critical feedback – a practice research scholars are all well-versed in – fellows wrote down concrete, positive comments to each speaker.

5.3 Professional & Personal Development



Diversity and Awareness Training Workshop

10 November 2022

KLI Klosterneuburg

Led by the Zivilcourage und Anti-Rassismus-Arbeit (ZARA, Civil Courage and Anti-racism-work), the goal of the workshop was to help our fellows develop sensitivities for the different cultural, social, and socio-economic backgrounds that inhabit the KLI space. The ZARA workshops were not just an engaging format for KLI researchers to introduce themselves to each other. It is also important for the fellows to know that ZARA is there for them if they experience or witness any hate crimes.

5.4 Other Initiatives



Help for Ukraine: Science Alliance for Ukraine

The KLI has been involved in several initiatives supporting researchers affected by the war in Ukraine. In collaboration with scientists overseas, we have created a website collecting academic and research positions offered specifically to those leaving their country and looking to continue their work abroad.

We are now reaching out for contributions in two possible ways:

1. If you are able to offer help in the form of grants, positions, lab space, desk, or any other type of support to students, researcher and lab staff, please complete this form and enter your offer into a collective database:

<https://bit.ly/ua-form>



- 106 2. Please share this website with your network, to make sure it reaches those in need. It contains a searchable database of over 2000 offerings across Europe, Asia and the Americas, available to all levels of academics and scholars.
<https://ukrainesciencealliance.com/>

The world has come together to help refugees land in countries providing a safe environment, but it is now crucial to focus on long-term support for continuing research by a worldwide cooperation of science.

5.5 Acknowledgment

The KLI is grateful to the Office of the State Government of Lower Austria, Department of Science and Research for additional financial support that contributed to the pursuit of the KLI's scientific endeavors.



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