SPSP Newsletter # 22

From the editors

Dear SPSPers,

In this volume we are featuring different spaces of philosophy of science in practice.

We start with Patrick Ferree and Stefano Canali interviewing Lara Keuck. Lara spoke about her research group *Practices of Validation in the Biomedical Sciences* and the importance of group work and an interdisciplinary approach for studying scientific practices.

Then we look at another example of an interdisciplinary space, with Martin Zach bringing us a reflection from Vera Materese about running an online seminar series on philosophy of science for and with astrophysicists.

Hernán Bobadilla takes us to the 14th Jornadas Rolando Chuaqui Kettlun at the University of Valparaíso. This meeting is a veritable institution in Chile, creating a space for discussion at the intersection of philosophy and science.

Next, Elis Jones reviews the new book *Evolution Evolving*, by Kevin Lala and colleagues. As Elis discusses, the book draws on philosophy of science and also provides ample room for philosophers interested in practices like prediction in evolutionary biology.

Julian Reiss takes the Proust Questionnaire this time around. We've also included a new section: *What we are listening to*. Our plan is to share some of the great resources out there in philosophy of science. So if you have suggestions for things you'd like to see featured, let us know!

On behalf of the SPSP newsletter team,

Rose Trappes

This volume's editorial team

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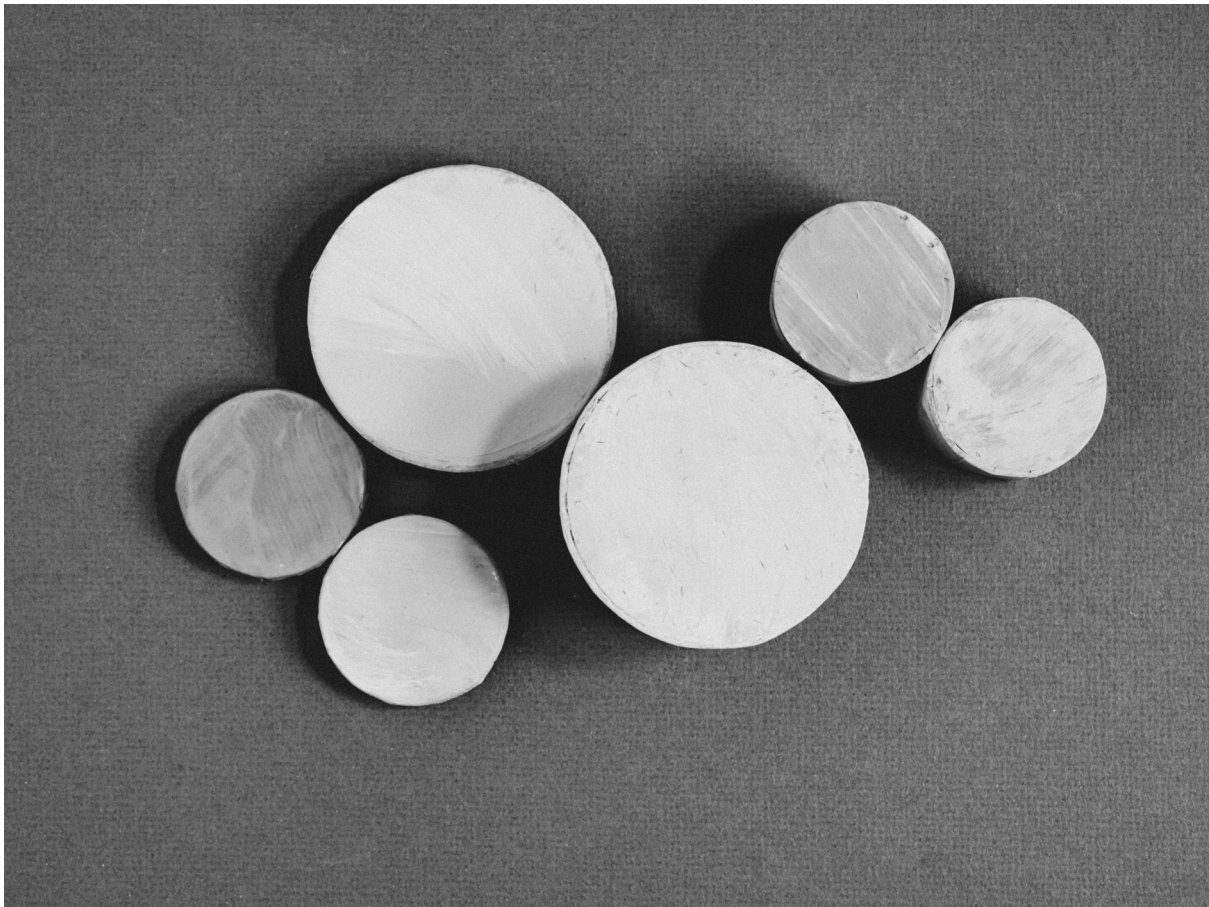

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Practices of Validation in the Biomedical Sciences

Patrick Ferree and Stefano Canali talk with Lara Keuck about the history and philosophy of validation, interdisciplinarity in the humanities, and what it means to run a large project in philosophy of science.

9 - Lara Keuck is professor of history and philosophy of medicine at Bielefeld University. She has an interdisciplinary background, which started with studying molecular biomedicine at Bonn University and the Robert Koch Institute and continued with a PhD in History, Philosophy, and Ethics of Medicine at the University Medical Center Mainz and the École normale supérieure Paris. She is interested in the nature of biomedical knowledge, and how it can change, be challenged,

How did you become interested in validation?

Lara: I have been interested in validity for quite a while. When I was in the virology lab at the Robert Koch Institute a clear attempt was made to bridge basic research (immune-evasion mechanisms in the rat cytomegalovirus) with public health measures. It seemed to me a very big step. Even when things worked out in our experiments, I was wondering what I could really say about human disease.

Questions like that were really bothering me, but at the time I didn't think about them in philosophical terms. But then, shortly after my PhD on the epistemology of medical classification systems, I started a project on animal models of human diseases together with my colleague Lara Huber to find a connection between these questions and the philosophical literature on modeling, extrapolation, and validity.

Later, I led a Branco Weiss junior research group at Humboldt University Berlin, where I combined my philosophical work on models and classifications with the history of how the understanding of disease has changed. I looked at Alzheimer's disease and my PhD student Alfred Freeborn worked on schizophrenia. The focus was how the concepts of disease changed with changing research methods, how very different questions got asked at different times, and why researchers were still trying to secure some epistemic continuity between historical and contemporary disease conceptualizations. In many instances, we found researchers pointing to concerns about diagnostic validity.

And how did the Max Plank project come about?

Lara: When I applied for the Max Planck Research Group, I wanted to look at how biomedical researchers actually evaluate that they have knowledge. Evaluation practices are very tightly connected to the concept of validity: the key validity question has been how we know if a test really measures what it should measure; if something is valid, it should be informative about the thing that you want to know about. But this framing only came about with the rise of abstract thinking. In the mid 19th century, researchers started to think about disease classifications and disease entities independently from their manifestation in individual patients. This move to abstract disease entities was tied to research on the basis of statistics, models, animals, etc. and the assumption that the results will be applicable to concrete human patients.

Something similar happened in the new science of psychology, where psychologists became interested in doing research on abstract constructs. That's the moment when they needed epistemological tools to grasp the problem that they were doing research on something like intelligence or a hypothetical disease entity such as general paresis, while the existence and definition of such target objects were themselves contentious. I was interested in how this problem had been conceptualized, and how related evaluative categories such as reliability,

specificity, sensitivity, and other technical terms of qualifying knowledge, came about in the early 20th century. I wanted to understand what was happening then, and why they have diversified and became so broadly applied.

It seemed to be a project you cannot do alone – really a group project, where you need different approaches and different case studies. What was particularly great for me has been to bring in people with a different sort of expertise who can then also broaden the scope. For instance, a key issue that we developed in the group was to look at the interconnections of biomedical practices of validation with methods outside of biomedicine, for instance psychology but also measurement theories, general philosophy (especially logical empiricists), the history of statistics, the rise of international regulatory agencies, etc.

10 - A photo of the research group from farewell party in July 2024, see the full list of members at this link.

One of the rallying cries of philosophy of science in practice is pluralism. Did you go into this project thinking you would find one kind of validity or lots?

Lara: I knew from my former work that if you look at the actors' categories, you will find a plurality of validity concepts. So for instance, in animal models, you have content validity, etiological validity, face validity, phenomenological validity, predictive validity, and so on. People have tried to systematize validity terms, but then new ones are proposed. It's argued that construct validity—*Do we hit what we want to hit?*—has been foundational for many of these developing validity concepts.

From a philosophical point of view, what interested me was exactly this. On the one hand, you have the plurality of concepts that do address different dimensions of, for instance, the relationship between animal model and human disease. But then on the other hand, you have some deep epistemological and ontological assumptions about the existence of one disease entity that you ideally want to hit. That became the main interest of my own work, to show where this comes from, but also how it's really not adequately describing what is going on in contemporary research.

If you take a look at the various protocols, both within animal based research but also in clinical research, and then if you go a step further outside of the research context, in various contexts of application, you will find that what is diagnosed as a disease is operationalized

very differently. And so in a way, you don't have that one target and maybe we are hitting different things in different contexts. Perhaps that's not necessarily a problem, but it raises specific methodological questions, because then it's not so much: *did we hit the right thing?* But rather: *do our various targets actually match?* And that's often an empirical question.

There are a lot of biomedical practices that are preoccupied with this question, but they do not address it as a meta-methodological issue. So I suggested an additional validity term called scope validity. And it's not in opposition to these other validity categories, but it addresses the frame in which they need to be addressed: how does the operationalization of the target in the context of experimentation condition the generalizability of the results to contexts, in which the target is operationalized differently?

What kinds of outputs or contributions did the project have?

Lara: On the one hand, we've had the individual projects. So we have historians of science who are writing history books, philosophers of science and philosophers of measurement who are contributing articles in their fields, etc. On the other hand, what we were trying to do is bring these case studies into conversation with each other, along certain dimensions of the bigger questions that we were raising. So, questions about how the targets of research have been framed through the introduction of new practices of validation that align, for instance, with more procedural understandings of validation, that is to say, that you can certify a method for regulatory purposes as being valid. Valid means in this procedural understanding not true, but good enough for its purpose. The focus has been on looking at how evaluative categories and methods have been formed and how they have evolved into having an instrumental value that sometimes wasn't intended in the beginning.

Often now validity is a shortcut to say: *this is valid, no questions anymore*. But what kinds of assumptions were there? How have these been spelled out in relation to very concrete geographical contexts or regulatory contexts? Unpacking this is something that humanities scholars can do. Bringing different case studies into dialogue with each other has helped generate a synergy among projects and people, where we still have individual projects, but of course, the conclusions that you draw, change when you do so in a more comparative framework.

Anything you want to share about working on a large interdisciplinary project?

Lara: I think that some of the aspects that are well developed in the natural sciences and are the standard format of larger projects are just not adequate for the humanities and social sciences. I'm convinced that in the humanities you need to have some sort of identification with what you're doing. So it's not just that you get a part of the project, and then you pursue this; in the humanities it's part of the research process that you develop a project yourself.

When you're working in a research group, this can create some sort of tension, because on the one hand, you have the group setting, and the group has to reply to some common framework or has to settle a common question. But then you also want people to develop their individual research profiles, and you want them to develop their own research questions. I think as project leader you have to strike a balance between autonomy—your PhD thesis, your book, your monograph—but then also bring these individual case studies and projects together, in a way that is more than just adding up things.

I think what we really need is a much broader methodological discourse within the field on how group projects work in philosophy of science. Group work is something that will not go away, that a lot of people are actively pursuing. But for me it's not evident in every case how the particular socioepistemic constellation of a research group is actually put to work.

Philosophers of science in practice (especially newcomers) are sometimes puzzled over whether they should contribute to scientific debates or philosophical debates. What are your thoughts on this?
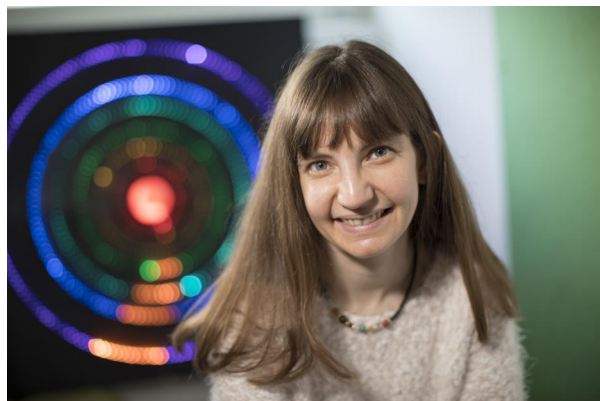
Lara: I have an interdisciplinary CV and was asking a lot of identity questions to myself during my postdocs. At some point, I realized that I'm just trying to follow what I'm interested in. I'm convinced that disciplinary boundaries are historical—we can show that they haven't existed for a very long time. So why should we think in these categories? I see

more interconnections with a biomedical scientist who's really worried about their research design, than I see with another philosopher who is just interested in concepts and not what people are doing with (or how they are understanding) these concepts in practice. Disciplinary labels might help us find a nice community to talk to and, importantly, a job in our contemporary institutional settings. But we shouldn't take them at face value.

"What we do not know, we teach one another"

Martin Zach talks to Vera Materese about constructing interdisciplinary spaces in an online seminar series on philosophy of science for and with astrophysicists.

Interactions between philosophers and scientists take on many forms, one of which is by organizing joint seminars. How are such seminars run? What sort of challenges do such seminars pose to philosophers and scientists alike? And how do philosophy of science topics relate to the research interests of scientists? In this piece we asked Vera Matarese to share her experience.

Vera: "*What we do not know, we teach one another*." These words from J. R. Oppenheimer welcomed me at the Center for Space and Habitability (CSH) at the University of Bern when I started my position there as a fellow in January 2020. They were printed in the informative pamphlets of the center and later resonated deeply with the work I undertook as a philosopher of science in a 'hub' populated mainly by astrophysicists researching on worlds within and outside the Solar System. The center, however, was not only that, as it was also a vibrant space open to philosophers of science like me, epidemiologists, AI engineers, and theologians. It provided a unique opportunity to explore how philosophical and other kinds of inquiry could enrich astrophysics as a discipline.

My role at CSH was to create a space where cutting-edge research in astrophysics could engage with philosophical questions, to foster interdisciplinary research between the two areas, and to bring philosophy into the work of astrophysicists in a way that felt natural. To achieve this goal, a powerful approach was through the organization of philosophy seminars primarily aimed at the Ph.D. students, postdocs and regular faculty members of the center. While these seminars were initially held in person, the arrival of the COVID-19 pandemic forced us to move them online. This transition allowed us to expand our reach, allowing philosophers of astrophysics from institutions outside Bern to join our discussions. In particular, Nora Boyd (Siena College) and Siska de Baerdemaeker (Stockholm University) became regular participants and greatly enriched the discussions.

The structure of these seminars was straightforward but effective. Each session focused on a topic within the philosophy of science, which could be relevant to astrophysical research. In the first year, for instance, we discussed confirmation, theory and model assessment, prediction versus accommodation, data overfitting, data omission, empirical experiments, thought experiments, simulations, models, philosophy of machine learning, scientific explanation and scientific understanding. My role was to present a summary of key-points from the literature, typically through a handout or a powerpoint, while keeping the focus on a few foundational research papers. The group would then be invited to initiate a discussion, where scientists could share their perspective on the topic and challenge philosophical reasoning.

This collaborative exchange was incredibly rewarding, but it came with its challenges. In 2020 I had little knowledge in astrophysics, except for my studies in the Hubble constant

controversy, which was a case study for my project on scientific replicability. My background was in general philosophy of science and the metaphysics of quantum mechanics. My approach was then to present general philosophy of science topics, learn how astrophysicists were relating them to their research, and later deepen into these aspects of astrophysics research by reading the relevant papers. This bottom-up approach helped me gradually build up 'local' competences in philosophy of astrophysics, a process that was accompanied with a more systematic study of the philosophy of astrophysics literature. The challenge extended beyond becoming familiar with philosophy of astrophysics research, though. I often felt that the salience of the philosophical literature that I was summarizing was not easily appreciated by the scientists. But in the end, these interdisciplinary dialogues led to some truly fascinating discussions and opened up new avenues for research.
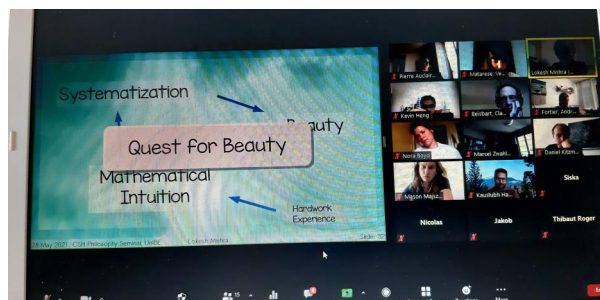
12 - The online CSH seminar

This success was possible thanks to all participants, but especially to Kevin Heng, at time the head of the center and now Chair Professor of Theoretical Astrophysics of Extrasolar Planets at the University Observatory Munich, and Claus Beisbart, a professor of philosophy of science at the Institute of Philosophy of Science at the University of Bern, but also affiliated with the center. Their visionary leadership, enthusiasm, and commitment to fostering interdisciplinary research by keeping the maximum standards of both philosophy of science and astrophysics played a pivotal role in the success of the seminars.

Over the course of three years, these meetings evolved from weekly seminars into a biweekly collaborative forum where philosophers and astrophysicists could shape the discipline of philosophy of astrophysics, by learning from one another in a spirit of mutual respect and curiosity. This interdisciplinary effort culminated in a volume, funded by the CSH and collecting original essays from many philosophers of astrophysics, entitled *The Philosophy of Astrophysics. Stars, Simulations, and the Struggle to Determine What is Out There*, which Kevin Heng and I coedited together with Nora Boyd and Siska de Baedemaeker.

13 - Last CSH workshop: on ignorance in science, philosophy and religion. The workshop brought philosophers, astrophysicists, biologists, theologians and historians all together.

My experience is not unique. Similar interdisciplinary efforts are taking place at other astrophysics centers, such as the Black Hole Initiative at Harvard University, where Helen Meskhidze continues the work started by Jamee Eder (Tufts University). However, what makes each of these experiences truly special is the unique blend of perspectives that emerge. Each of these centers has a particular scientific focus within the astrophysics research, but the interdisciplinary efforts at their heart make their contribution impactful in far-reaching ways. I hope that other centers in astrophysics will embrace this spirit of shared knowledge and cross-fertilization. Philosophy of astrophysics is still in its infancy, and its promise, I believe, can be fully realized only through this kind of synergies. Moreover, the most interesting intellectual journeys often arise when we learn from one another, sharing what we know and what we do not know.

Philosophy of Science in Practice from the Global South

Ever wonder how language, culture, and the energy of the streets shape the way philosophers of science do their thing? Picture discussing hardcore epistemology in a spontaneous mix of Spanish, Portuguese, and English, while the rhythmic beats of "batucada" drums from a nearby protest echo outside the venue, as the demonstrators move through the colourful maze of houses spread across Valparaíso's hills. Lucky for us, we don't need to rely on wild thought experiments to imagine this; it actually happened!

The "Jornadas Rolando Chuaqui Kettlun" is an annual academic gathering that's been going strong since 1999. Held at different universities across Chile, it's named in honour of Professor Rolando Chuaqui Kettlun, a distinguished Chilean mathematician and philosopher of science known for his pivotal role in advancing formal sciences in the country during the 20th century. The "Jornadas" was created to keep Chuaqui's intellectual legacy alive, passing it to new generations of scholars and students across fields like mathematics, science, and philosophy.

Over the years, the "Jornadas" has become a major hub for discussions at the intersection of philosophy and science, bringing together researchers and students from Chile and beyond. These discussions cover contemporary, pressing issues, sparking critical reflection while fostering a connected, international community of thinkers. And it's more than just talk—the collaborations that come out of this event often reach far beyond it.

The latest edition of the "Jornadas" (held from September 4th to 6th, 2024, at the Instituto de Filosofía, Universidad de Valparaíso) tackled a wide range of topics—from logic and metaphysics to the philosophy of specific scientific fields. But one of the hottest topics this year, particularly relevant to the community of philosophers of science in practice, was artificial intelligence. Dr. Andrés Páez, a distinguished scholar from Universidad de los Andes, Colombia, led two key events dedicated to this subject: a roundtable and a plenary lecture.

The roundtable, titled "Philosophical Perspectives on Artificial Intelligence," delved into the ethical challenges posed by AI, especially its potential for discrimination in decision-making. The conversation focused on how we might build transparency and accountability into algorithms to reduce bias and promote fairness. Sounds straightforward, right? Not quite, as Páez explained in his plenary lecture, "What Does It Mean to Explain Predictions in a Black Box Algorithm?" In it, he suggested that we might need to rethink the whole concept of "explainability" in AI, and perhaps shift towards aiming for a broader form of understanding instead.

14 - Participants at the roundtable Philosophical Perspectives on Artificial Intelligence

Photo credit: Rodrigo Silva Cobarrubias

15 - Participants at the roundtable Philosophical Perspectives on Artificial Intelligence

Photo credit: Rodrigo Silva Cobarrubias

16 - Photo credit: Rodrigo Silva Cobarrubias

17 - Photo credit: Rodrigo Silva Cobarrubias

In a nutshell, the Jornadas Rolando Chuaqui Kettlun is more than just an academic conference. It's a space where complex problems and urgent issues affecting all of us are tackled head-on. It's especially important to pay attention to perspectives emerging from the Global South, not just to challenge the long-standing asymmetries in the global intellectual landscape, but because the innovative ideas and transformations from this region might offer real pathways to solving the many crises increasingly affecting our lives.

Want to know more? [Please check out the "Jornadas" website!](#) (In Spanish)

A theory of evolution for every organism? Themes from 'Evolution Evolving'

September 2024 saw the release of 'Evolution Evolving: The Developmental Origins of Adaptation and Biodiversity' by Kevin Lala, Tobias Uller, Nathalie Feiner, Marcus Feldman, and Scott Gilbert. The book draws on some philosophical literature and provides a rich resource for philosophers who analyse research programs in evolutionary biology. Here I briefly explore one theme from the book: inheritance channels and their role in making predictions in evolution.
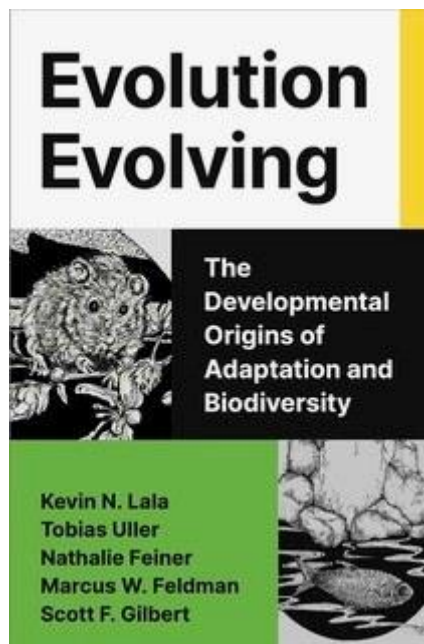
18 - [Kevin N. Lala](), [Tobias Uller](), [Nathalie Feiner](), [Marcus Feldman](), and [Scott F. Gilbert](), Evolution Evolving: The Developmental Origins of Adaptation and Biodiversity, Princeton University Press. 2024.

An individualised view of evolution

The book synthesises cutting-edge research in developmental biology, niche construction theory, (epi)genetics, cultural evolution, and many more fields. Their point is to show that descriptions of the rules of evolution have been too abstract. Instead, they argue, the rules of evolution vary with context. Mechanisms of survival, descent and modification change with the physiology and environment of a given organism. Living things, on this perspective, are not just subject to evolution, but also actively participate in it.

Evolution as prediction

The book presents phenotypic development as 'predicting' the environments the organism will find itself in. Information about potential future environments comes through a range of 'inheritance channels.' Some channels, such as some genetic inheritance, may be slow to respond to environmental changes but can have comparatively long-lasting effects. Others, such as the epigenome, microbiome, or organism behaviour, might be quicker: they can

allow for updates during the lifetime of the organism, but may produce more fleeting effects. (There are interesting questions to be explored here about the nature of this 'prediction' and 'information'.)
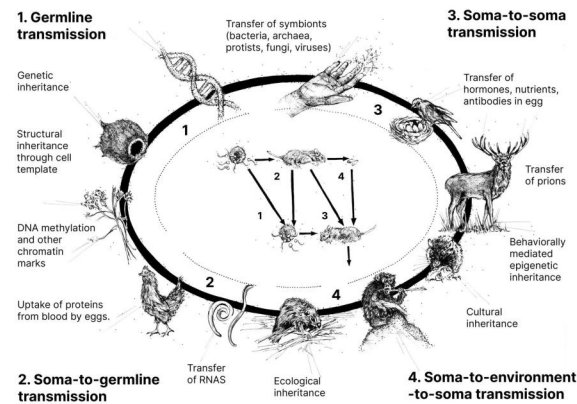

19 - Illustration of various mechanisms of inheritance. These may vary in how long-lasting their effects are, and how quickly they can respond to environmental changes. From Evolution Evolving *(image by David Andrews).*

Inheritance channels: questions, answers, and further questions

Inheritance systems work differently in different species. In a species with short lifespans, genetic inheritance can be very fast (hence antimicrobial resistance in microbes). For some species, behavioural and cultural routes might not be well developed. Others might have mechanisms which wipe their epigenomes regularly, making epigenetic inheritance very weak. Even within species, inheritance mechanisms can vary and change because organisms may expose themselves to different environments, engage in different activities, and express different phenotypes.

Channels may reinforce, supplant, or assimilate changes driven by other channels. For example, environmental changes can mimic genetic mutations or vice versa (the book uses the example of Mexican Cave Fish to vividly illustrate this). Epigenetic markers can impact the mutation rate of genes they attach to (allowing for epigenetic changes that can become genetic). Horizontal gene transfer can move genes from microbes to their hosts.

This raises some interesting questions: can all inheritance channels translate information into all other channels? Whilst the authors recognise that these 'channels' are idealisations out of a more complex underlying inheritance system, channels seem to cluster around the mechanisms they employ (e.g., biochemistry in the case of genetics and epigenetics) – does this point to some meta-taxonomy of inheritance channels that could be used to elucidate these ideas? Are there other ways to grapple with this complexity, and how might this depend on a given biological system, ecosystem, and research environment?
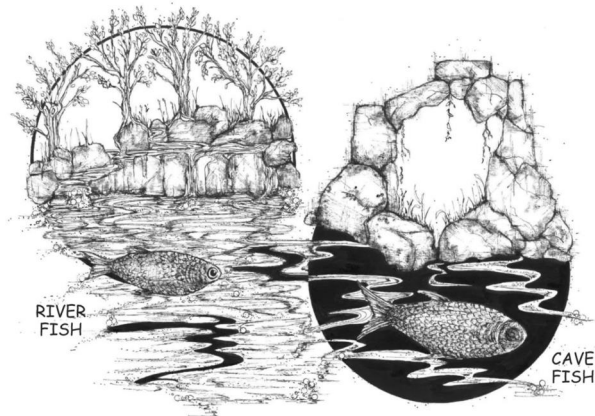
20 - The Mexican Cave Fish (Astyanax mexicanus). Some populations live in caves, and are blind, whilst others live in sunnier environments, and are not. The book uses this species to illustrate several arguments. The development of blindness seems to be correlated with changes in other features of the organism, due to the same developmental mechanisms being used in multiple ways. The emergence of the adaptations of blind fish also seems to have been in part driven by development, producing traits which were then subsequently selected for.

Illustration of the Mexican Cave Fish from Evolution Evolving *(image by David Andrews).*

Evolutionary science as predictive science

The authors invoke prediction in another sense, too. They argue that integrating development and evolution allows for predictions about the kinds of inheritance systems employed, and phenotypes developed, in a given case. Take an apparently simple example: animals in hot and dry environments need mechanisms to avoid overheating and drying out. If animals are mobile, we might expect them to evolve shade-seeking behaviour. If shade is not available, or organisms immobile, epigenetic or genetic changes might be expected. Organisms with active and consequential microbiomes might evolve microbially-mediated solutions. The question animating this perspective is thus: in any given organism-environment nexus, which bits are likely to change? The authors suggest that experiments modifying parts of these inheritance systems, such as those where niches are modified to see effects on the organism, can be very useful here.

There are also many other topics covered in the book which are likely to be of interest to philosophers, including, but not limited to, the more established debates about the extended evolutionary synthesis.

The Proust Questionnaire

Saana Jukola talks to Julian Reiss

21 - Julian Reiss is Professor of Philosophy at Johannes Kepler University Linz

Who are your favourite heroines or heroes? In real life or in fiction.

If I were to pick a historical figure, it would be Alexis de Tocqueville -- historian, social scientist, philosopher, statesman. He has a claim to be the first political scientist (as opposed to political philosopher) in that his political analysis was based on a highly systematic observation and comparisons of real institutions and institutional practices in a variety of countries, most notably his native France and the United States. Some passages in *Democracy in America* are frighteningly prescient, describing contemporary societies and governments unbelievably well. He helped to draft the constitution of short-lived, liberal Second French Republic. He's a true hero of liberalism, of historiography, as well as of social science methodology.

Which words or phrases do you overuse?

I once read (without having verified it myself) that the word Karl Popper used most frequently was "I". I aim to avoid that as much as possible, trying to talk about arguments rather than what "I think" -- because who cares? So "I", I hope, is not a word I overuse. However, like Tocqueville, I tend not to accept any absolute truths. I therefore often qualify my statements, using words or phrases such as "but", "however", "besides", "on the one hand, on the other hand" and so forth. I can imagine that some of my readers might think that I overuse such qualifications, and some of them might be right.

What is your favourite food?

I recently switched to a carnivore diet, so the choice of foods I eat is fairly limited. Technically, I can't even use herbs and spices. Tomahawk steak, medium rare, seasoned only with salt.

What is the most critical academic or non-academic feedback you ever received?

When I did my PhD I was part of a research group called "Measurement and Modelling in Physics and Economics", led by Nancy Cartwright and Mary Morgan, who were also my PhD supervisors. Nancy used to grill all of her PhD students pretty badly once, when they were up for a presentation. I received that treatment twice. That felt... critical.

Where do you write your best work?

Travelling. Trains and boats and planes.

What is your favourite entertainment?

It used to be cooking. I even competed in a cooking show on TV, something like Germany's version of MasterChef. I didn't do too badly, winning the first week, and going all the way to the final in Champions' Week. But switching to the carnivore diet made cooking a little boring. I guess it's playing the piano now. I began as a teenager but neglected it for many years. Now I play almost every day I'm at home. I also began to sing along. But my vocal range is about as limited as my diet. I can do some Johnny Cash and some Leonard Cohen songs okay.

What profession would you like to attempt besides your own?

I have huge respect for entrepreneurs and anyone who is self-employed. Starting my own business -- and, if possible, providing work opportunities for others -- is something I've been working on on the side for some time. Ideally in an area I know something about, education, economics... I have some ideas but, perhaps understandably, prefer not to share them as yet.

What is your greatest achievement?

I try not to think in terms of goals and achieving these goals. Aiming to reach goals is a recipe for unhappiness. Suppose you aim to lose 20 pounds of weight. Every day you haven't reached your goal, you haven't lost 20 pounds, you're frustrated because you haven't reached your goal. But then in case you do reach your goal you might be happy for a minute but the next minute feel frustrated again because you just lost your goal. A better way of thinking about living a successful life is to develop good habits: a good diet, sufficient exercise, working on one's professional development beyond the day job, maintaining high quality and sufficiently many personal relationships and so on. It's really a version of the Stoic idea that one should only be concerned with the things one can control. You can't control losing 20 pounds (an achievement). But you can control your diet (a habit). You can't control running a marathon (an achievement). But you can control how much exercise you

do daily or weekly (a habit). You can't control meeting the person who helps you getting the job of your dreams (an achievement). But you can control the amount of time and effort you put into networking (a habit). In some of these areas I have developed good habits, others would benefit from some improvement.

What is your most treasured possession?

I generally tend not to value things all that highly. I'm quite proud of my collection of modern art, but if I had to move to a place to which I could not take it with me, I would not suffer a great deal. Generally relationships are more important to me, my family, my partner, my lifelong friends, but also my network of colleagues worldwide. It is these relationships I treasure very highly.

Where were or are you happiest?

I try to spend some time every day on overcoming challenges (including those posed by my own personality), becoming more resilient, improving myself and my perception of things. There are ups and downs for sure, but generally it's an upward path. So I guess my answer is "right here, right now".

What we're listening to

At the moment we're loving [The HPS Podcast](#). Samara Greenwood and Carmelina Contarino from the University of Melbourne are doing an amazing job producing and hosting this podcast. The podcast features interviews with leading scholars in history, philosophy, and

social studies of science. It's a great way to learn while multitasking, making even the dullest chores enjoyable! Episodes last between 20 and 40 minutes, and season 4 has just dropped.

Thank you

To all our writers and readers. And we hope you can all find a reason for thinking this …