

IAST MAGAZINE

INSTITUTE
FOR ADVANCED
STUDY IN
TOULOUSE

WINTER 2021 #18



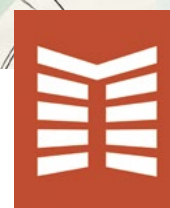
CELEBRATING 10 YEARS OF IAST

PAUL SEABRIGHT,
LEADING
BY EXAMPLE

CROSSING CHANNELS,
OUR NEW PODCAST
SERIES

SABINE NÖBEL
ON THE ORIGINS
OF INNOVATION

MANVIR SINGH ON
THE POWER OF
BLACK MAGIC



In this ISSUE

**Biannual magazine
of the Institute for Advanced
Study in Toulouse**

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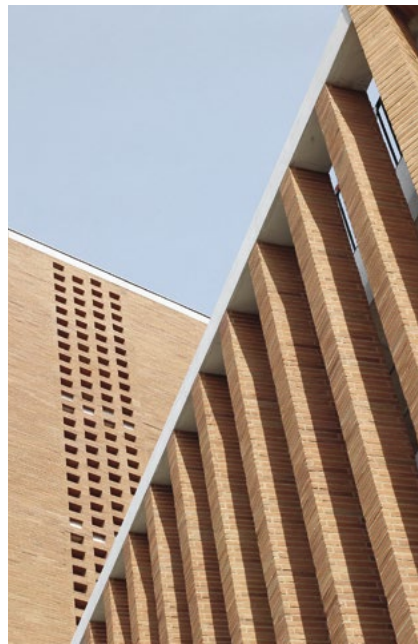
KEEP IN TOUCH

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OUR SCIENTIFIC VISION

**The Institute for Advanced Study in
Toulouse is a unified scientific project
that aims to study human behavior.**

Our ambition is to break down artificial disciplinary boundaries to unlock new ideas and address the challenges of the 21st century. We have a team of resident full-time researchers in Toulouse, meeting several times a week across all social-science disciplines.

IAST researchers also work in partnership with economists and mathematicians at Toulouse School of Economics, Toulouse 1 Capitole University, INRA and CNRS. Our methods focus on analytical and quantitative methods, including case-study evidence. We believe our work needs to spread across the oceans and therefore, year after year, we welcome some of the world's best researchers, including a network of visitors from 27 countries.

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Editorial

Celebrating the vision of its founders, IAST enters a new era



**INGELA
ALGER**

IAST Director

As IAST enters its second decade and welcomes new leadership, it is time to take stock of its past and imagine its future. Ten years ago, a handful of enthusiastic economists embarked on a journey with the ambition to create a world-renowned interdisciplinary research institute from scratch. Thanks in large part to the vision of former director Paul Seabright and former scientific director Karine van der Straeten, the road towards this goal soon became clear: Hire brilliant junior scientists and host visits by established scholars, and let them interact through seminars, conferences, as well as a yearly retreat aimed at fostering cross-disciplinary dialogue.

Our bottom-up approach is designed to stimulate curiosity and intrinsic motivation. These are crucial IAST incentives in a world where interdisciplinary research is still perceived as a riskier career path. The excitement that newcomers exude a few weeks into their stay at IAST is testimony to the success of this model. As they start experiencing our multidisciplinary environment first-hand, their intellectual stimulation and wonder is typically far beyond their expectations. Another telling sign is the popularity of alumni events, which attract dozens of former post-doctoral research fellows and visitors every year. The quality of life in Toulouse often leaves a mark as well – no less than two research fellows have chosen first names inspired by the *Ville Rose* for their children!

With 10 years of experience in hiring in evolutionary anthropology, evolutionary biology, economic history and history, law and economics, political science, psychology, and sociology, as well a reputation which triggers hundreds of applications to our post-doctoral research fellow positions every year, IAST can strike a fine balance between disciplines, while striving for excellence. The publications, grants, and prizes secured by our young scholars are concrete examples of their scientific caliber, a product of the same energy they put into the new Research Teams, on Social Evolution; Leadership, Power and Inequality; Evolution of Technology; and Expanded Morality.

Institutions matter. Their ability to foster productive exchanges is determined by explicit and implicit rules and norms, as research by Elinor Ostrom and others shows. Mutual respect, both between individuals and between academic disciplines, is at the heart of IAST's success, as is the ambition of its members to cross the channels carved out through time between disciplinary communities. It is an honor and a pleasure for me to take up the relay baton.



INSTITUTIONAL NEWS

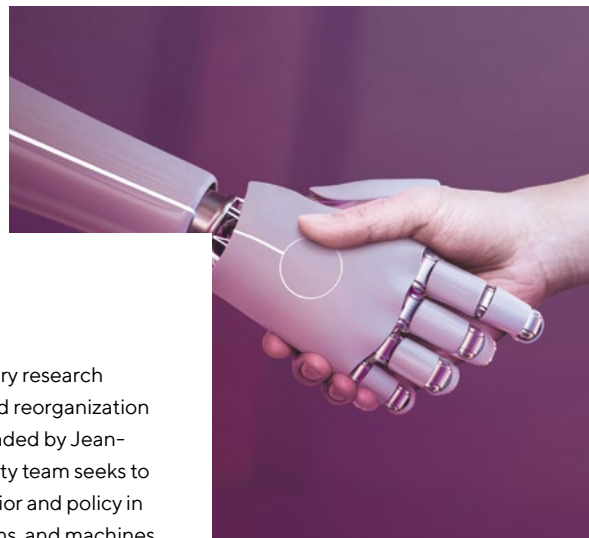
NEW LEADERS TAKE THE HELM

Following Paul Seabright's outstanding leadership over the past 10 years (more on page 20), Ingela Alger was appointed IAST Director on September 1. Ingela has been at IAST since its inception and was Director of the Biology program between 2012 and 2018. Jean-François Bonnefon has also become the new Scientific Director, replacing Ingela Alger.

RESEARCH TEAMS

EXPANDED MORALITY

Following the success of its first interdisciplinary research teams, IAST is accelerating its subject-oriented reorganization with the launch of a fourth research team. Headed by Jean-François Bonnefon, the new Expanded Morality team seeks to understand how moral concerns shape behavior and policy in the global community of humans, animals, firms, and machines.



IN THE MEDIA

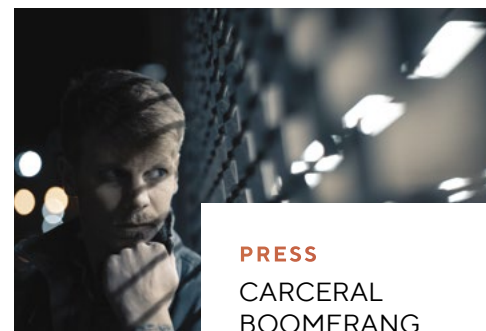
CROSSING CHANNELS
NEW PODCAST SERIES

IAST and the University of Cambridge have launched a new podcast, *Crossing Channels*, focusing on interdisciplinary answers to today's challenging questions. The opening episode of the series, hosted by former BBC journalist Rory Cellan-Jones, featured Mohamed Saleh (IAST), Dennis Grube (Bennett Institute), and Catherine Haddon (Institute for Government) discussing "Why has it become so hard to run governments?". Listen in on our website: iast.fr/podcasts.

[More on page 12.](#)

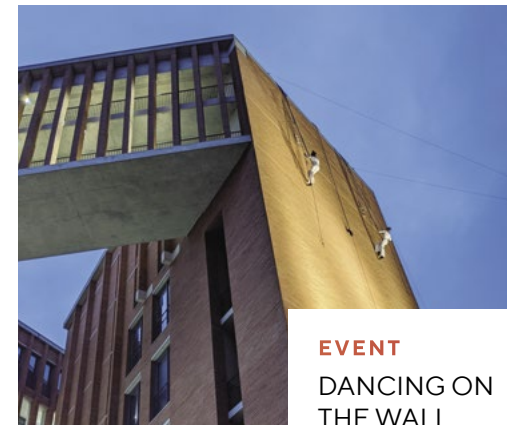
TELEVISION
US, ROBOTS

New IAST Scientific Director Jean-François Bonnefon appeared on Franco-German TV channel Arte to talk about his work on moral machines and how autonomous vehicles should act in difficult situations.



PRESS
CARCERAL BOOMERANG

Daniel Chen co-wrote an article in *La Tribune* with Erich Reinhart (Harvard University) on the potential impact of penitentiary institutions on the spread of the pandemic. Their research in the US, which suggests that the circulation of the virus in jails is a danger to everyone, has received widespread press coverage.



EVENT
DANCING ON THE WALL

Toulouse partied through its fourth heritage celebration night with many festivities. In particular, a beautiful performance of aerial dances by Compagnie 9.81 on the walls of the IAST-TSE building attracted large crowds.

PRESS
SEXISM IN SPORTS

An expert on ethical marketing and consumer psychology, Sylvie Borau (TBS-IAST) explained to press outlets how women are always told how to dress, pointing out that "sportswear is a catalyst, revealing a much deeper problem".



PRESS
AI CORRUPTS

In an op-ed in the *Los Angeles Times*, IAST Scientific Director Jean-François Bonnefon and his co-authors explained how AI can, in some cases, make humans less moral.

VIDEO
EMOTIONAL TOOLS

In a short video you can watch on our Facebook page, former IAST researcher Astrid Hopfensitz, now at EM Lyon, discusses her research on the strategic use of emotions and why some people are better at using theirs than others.

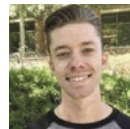


Welcome to our new recruits



PIRET AVILA
BIOLOGY
Arriving April 1, 2022
University of Lausanne

Piret is a postdoctoral biologist at University of Lausanne, working on the evolution of eusociality, sexual selection and population dynamics.



PATRICK DURKEE
PSYCHOLOGY
Arriving January 1, 2022
University of Texas at Austin

Patrick is a doctoral student in psychology in the Buss Lab at UT Austin. He investigates the psychological underpinnings of human status hierarchies and how they relate to broad cultural and individual differences. Patrick also teaches R.



JEFFREY FRIEDMAN
POLITICAL SCIENCE
IAST Visiting Fellow - Academic year
Dartmouth College

Jeffrey is an Associate Professor of Government at Dartmouth College. His research focuses on the ways in which risk and uncertainty shape high-stakes decisions, particularly in the domain of national security.



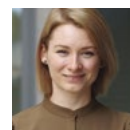
MARION HOFFMAN
SOCIOLOGY
IAST Research Fellow
ETH Zürich

Marion is a sociologist and mathematician specialized in the study of social networks, interaction dynamics in social groups, and modeling partitions of individuals.



MARIJN KEIJZER
SOCIOLOGY
IAST Research Fellow
University of Groningen

Marijn is a sociologist whose main interest lies in computational social science and complexity science. Specifically, theoretical and empirical modeling of online behavior and digital trace data. In his PhD research, he focuses on the impact of social media platforms on opinion formation and the diffusion of culture.



MARIA KLESHNINA
MATHEMATICS & BIOLOGY
IAST Research Fellow - Institute of
Science and Technology, Austria

Maria is a mathematical biologist whose research focuses on evolutionary game theory. She is particularly interested in behavioral plasticity and learning as well as their effects on the evolution of cooperation.



MOUNU PREM
ECONOMICS
IAST Visiting Fellow - Academic year
Universidad del Rosario

Mounu is an economist whose research interests span political economy, development economics, corporate finance, and economic history. He has focused his research on the economic and political legacies of Pinochet's dictatorship, the causes and consequences of corruption, the allocation of public-sector jobs, Colombia's post-peace agreement, and the role of internal markets in business groups.



KATHRYN SCHWARTZ
HISTORY
IAST Research Fellow
University of Massachusetts, Amherst

Kathryn's research focuses on the social implications of technological change. She is currently working on a book project entitled "Print and the People of Cairo, 19th c.". Her recent articles examine printing and the book trade in a global context as social praxis, and as an arena for forwarding ideas about advancement and backwardness.



CAMERON SHELTON
POLITICAL SCIENCE
IAST Visiting Fellow - Academic year
Claremont McKenna College

Cameron's research focuses on empirical political economy and macroeconomics. He has analyzed the impact of policy uncertainty, the links between the US Congress and Federal Reserve, and is currently working on gerrymandering bargaining, state legislative redistricting, productivity costs of crony capitalism, and taxation depending on the age of the population.



ALBERTO SIMPSEN
POLITICAL SCIENCE
IAST Visiting Fellow - Academic year
ITAM

Alberto studies major issues in the political economy of development, including corruption, electoral manipulation, governance, and democratic accountability. In his work, he utilizes statistical, experimental, formal, and qualitative methods.



SAMUEL SNOW
BIOLOGY
IAST Research Fellow
Yale University

Samuel explores the fascinating evolutionary consequences of mate choice for sexual ornamentation, mate-system evolution, and social behavior. He integrates natural history insights and empirical observation into the development of new evolutionary theory. These theoretical frameworks provide a scaffold for asking new questions of empirical systems.



DANIEL TAVANA
POLITICAL SCIENCE
IAST Research Fellow
Princeton University

Daniel's interests include elections, identity, and comparative political behavior, as well as the dynamics of political opposition in authoritarian regimes. He studies these issues in the Middle East and North Africa, where he uses a variety of methods and sources of data to study electoral politics.



SEBASTIAN THIEME
POLITICAL SCIENCE
IAST Research Fellow
Princeton University

Sebastian's research is concentrated on US politics, political economy, and political methodology, with a focus on political institutions, money and private influence in politics, and legislative politics.



JEAN-FRANÇOIS
BONNEFON

EXPANDED
MORALITY

What happens when machines enter our moral maze?

Recently appointed as IAST scientific director and leader of a new 'Expanded Morality' research team, Jean-François Bonnefon tells us about his new projects and discusses his latest research on the ethics of artificial intelligence (AI) and the potential for machines to corrupt humans.

WHAT ARE YOUR PLANS AS SCIENTIFIC DIRECTOR?

Getting interdisciplinarity right is challenging but the launch of the IAST research teams is a great step towards better connections between the disciplines. Crossing perspectives and research through the lens of a particular topic is a straightforward way for people from different disciplines to work together in meaningful collaborations. I'm excited to read what the research teams will produce. If they function as well as we hope they will, I'm confident they'll be renewed and new ones will develop.

WHAT IS THE FOCUS OF THE NEW EXPANDED MORALITY RESEARCH TEAM?

For a very long time, morality was about what humans did to other humans. In recent decades though, the purview of morality was extended to other kind of agents and patients: for example, people started to care about the moral behavior of companies, or the morality of what was done to nonhuman animals. And now, with the rise of AI, machines are entering the moral circle. These developments are all very exciting, and a dozen researchers at IAST have joined forces to investigate this new moral landscape, bringing together their expertise in psychology, economics, anthropology, and yet other disciplines.

"We emphasized a danger stemming from using AI to pass on key knowledge, decisions and actions"

HOW DOES YOUR WORK ON AI CONNECT TO THESE DISCUSSIONS?

I've always been fascinated by the questions surrounding the morality of machines: what we allow them to do to us, what we do to them, and how we let them shape our moral interactions. My work in that domain started with the ethical dilemmas of automated vehicles, but later extended to any type of AI.

For example, I recently wrote a review article with Nils Köbis and Iyad Rahwan, both at the Max Planck Institute for Human Development, on the various ways intelligent machines can corrode our moral behavior. Niels had been working on how humans can corrupt each other, and Iyad and I had studied the ethics of AI. We saw a convergence there, and an opportunity to study the impact of AI on human moral behavior, which seemed

interesting because moral corruption had mostly been studied in human-to-human contexts. We wondered whether a machine could corrupt humans in the same way humans could corrupt each other — or in entirely novel ways!

DO MACHINES PRESENT A MORAL THREAT?

We explored the different possible interactions between machines and humans and how these could lead to a moral corruption of humans by the machines. We noted that machines probably cannot corrupt human behavior by being bad role models, but we emphasized a danger stemming from using AI to pass on key knowledge, decisions and actions. For example, companies that rely on AI for pricing may not notice (or not try too hard to notice) that their algorithms are colluding, or that their marketing strategy now relies on deception. The way AI are usually built, as "black box" algorithms, makes it harder to notice when an outcome is reached by unethical means.

Indeed, a morally corrupt AI could give unethical advice to humans without the humans noticing that something is wrong. The prospect of people working hand in hand with machines can be worrisome if humans hide their responsibility behind the machines, or if the machines give them plausible deniability in their own eyes. These situations can arise in many domains, as AI is becoming a tool we rely on more and more, even for critical decisions and actions.

IAST IS TURNING 10, WHAT ARE YOUR VIEWS ON THE INSTITUTE?

With so many articles being published every day mathematical biologist, science can feel like a fight for attention. But IAST is the perfect place to prepare for the challenge of speaking to a broad audience. It's a battleground where your ideas can show their mettle, a multidisciplinary microcosm to prepare them for the big stage. If you have an idea that excites our biologists, political scientists, anthropologists, historians, psychologists, and (let's get crazy) our economists... then you can be sure you have some pretty good materials in your hands. This realization has been transformative for my own research — and I delight, every year, in seeing our research fellows having this same experience, which forever changes the way they work.



MOHAMED SALEH

CROSSING CHANNELS

Why is it so hard to govern?

A new IAST podcast series aims to offer interdisciplinary perspectives on significant challenges facing society today. Produced jointly with the Bennett Institute for Public Policy at the University of Cambridge, 'Crossing Channels' invites researchers from both sides of the Channel – or 'La Manche' – to an audio panel hosted by former BBC journalist Rory Cellan-Jones. In the first episode, political scientist Dennis Grube (Cambridge), historian Catherine Haddon (Institute for Government, UK), and economic historian Mohamed Saleh (IAST) discussed the difficulties currently facing our elected leaders. Here are some of the highlights from their exchanges.

There has never been a golden age for governments, believes Dennis Grube, but things are certainly not getting easier. "Government has always been a complicated affair," he argued. "However, the problem of speed in government is starting to bite because everything seems to be moving at a crisis pace. We also see a higher rate of partisanship, combined with echo chambers on social media." Mohammed Saleh agreed that running a government has become increasingly complex: "In ancient times, it was pretty straightforward to raise taxes and to maintain trust in governments. This has become much harder in modern times due to tax havens and the rise of misinformation." Catherine Haddon emphasized the rise of the welfare state as a key driver of increasing governmental complexity.

Public attitudes vary in different countries, the Institute for Government historian added: "On the European continent, there seems to be a better link between academia and government; in the UK, bureaucracy and public administration have become dirty words." Mohamed,

who has lived in the US and France, noted a decline in French confidence in formal institutions: "In France, there has traditionally been a higher trust in the state and the bureaucracy but there is a perception that the state has been increasingly captured by elites who aren't representing the population well."

"One lesson from the pandemic is that we can regain trust in the state as a neutral agent"

The Covid-19 pandemic has clearly demonstrated that following "the science" will not give governments a free pass on "the politics", said Dennis: "Scientific expertise is one link in the chain, a really important link. But you also need to understand the problem you're trying to fix and to get the story right." Mohammed warned that governments need to be wary of populist threats while managing the health crisis: "The key challenge is to design a rational system and science-based policy while tackling the concerns of

the population that the system has been captured by elites and experts. One lesson from the pandemic is that we can regain trust in the state as a neutral agent. We can regain trust, for example, in the NHS in the UK, or in the health system in France, Spain and Italy, without necessarily having these links to politicians. It's interesting that Spain and Italy, which are usually considered as having less trust in their governments than, say, France or northern Europe, managed to attain a higher vaccination rate. This may help us to revise our narratives and our perceptions of why this is happening."

States are not good at learning from their mistakes, said Catherine: "The key is that governments learn best when there is an unambiguous political impact, whether that's negative or positive. The difficulty with the pandemic is that it is seen by the public as something very complex – it's not seen as something that was specifically down to this government, its handling, and its failure. So I worry that we aren't learning those deeper lessons and that they are very difficult things for the state to learn."



Crossing Channels podcast series

- > 12 episodes for season 1
- > One episode per month available on Spotify and iTunes

NEXT EPISODES

Nov. 29 : "What does it mean to bring nature into the economy 2021 and why should it be done – or not?"
With Nicolas Treich

Jan. 03 : "Can Artificial Intelligence be ethical?" 2022
With Jean-François Bonnefon and Daniel Chen

Jan. 31 : "Can digital technologies help Africa to jump over the infrastructure barriers to development?"
With Emmanuelle Auriol and Stéphane Straub

> More on: iast.fr/podcast



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Paul Seabright



BEYOND BORDERS
IAST'S 10TH ANNIVERSARY

A decade of thinking differently

"To invent is to think outside the box," said Albert Einstein, a former resident of the Princeton Institute for Advanced Study. Inspired by this innovative mindset and the Princeton model, IAST founder Jean Tirole envisioned a world-class interdisciplinary center that would transform the French and European social science landscape. On its 10th anniversary, proud of the energy and creativity of our researchers, we look back on the journey so far.

IAST was created in 2011 to encourage a multidisciplinary approach to the study of human behavior. Selected as a "Laboratory of Excellence" by an international jury, the project won €25 million from an ambitious French government program to promote the most promising research clusters.

Reaping the benefits of academic risk-taking, IAST hit the ground running. Founding Director **Patrick Bolton** enjoyed the assistance of **Roland Bénabou**, invited for a year from Princeton, and **Ingela Alger**, as well as the dedication of IAST staff and the generous support of many other leading scientists. Within a year, **Paul Seabright** had become the new director, and IAST was generating a buzz in France, welcoming internationally renowned visitors to exchange ideas with the scientific community in Toulouse as part of a dense program of multidisciplinary seminars and conferences.

Political economist **Karine Van Der Straeten** was on board from the start. "I remember the first discussions with Jean before setting up the IAST project – it seemed absolutely fascinating to me, but also a little crazy! Obviously a lot remains to be done. But the daily dialogue between

disciplines has reinforced my conviction of the complementarity between the social sciences, each bringing its own light."

"IAST brings so many people from different disciplines together to work on one major topic, like human evolution. Normally, a university would have one building for economists, one for biologists, one for anthropologists... At IAST, it's different – people really interact"

Sabine Nöbel, IAST biologist

As soon as the project was underway, IAST began to recruit permanent researchers. Soon, a small team of young scholars was producing imaginative research, working at the crossroads of law, sociology, biology, psychology, political science, management science, and economics, but also exploring the paths of quantitative history, demography, political philosophy, human ecology, mathematics, anthropology, and cognitive science. They began to investigate emerging concepts and to benefit from

the astonishing network effects of interdisciplinary interaction.

Legal scholar and economist **Daniel Chen** has memorably described IAST as an enchanted library, where the books talk back to you. "I really appreciate the large community of researchers and seminars across a range of disciplines. It's an intellectual buffet, which helps generate new ideas and cross-fertilization. It's like being Alice in Wonderland. You pop your head through a door between two disciplines... Suddenly, everything is different. And trying to make sense of it all leads to fruitful synapses."

It was initially far from obvious that the IAST model would work. "We had to teach the different disciplines to talk to each other," says **Paul Seabright**. "It is easy to organize conferences during which researchers from different disciplines meet and address their colleagues. It is also easy to publish a book with chapters written by different researchers, each representing a different scientific discipline. But at IAST interdisciplinarity means more. We have explicitly rejected a compartmentalized model of the social sciences, which would be independent while cohabiting under the same name. →

Our political scientists and historians participate in biology seminars, our biologists learn from our sociologists how to think about networks, our anthropologists comment on the work of our economists and vice versa, and our Distinguished Lectures show that a primatologist can tell us a lot about politics or an ancient historian about economic inequality. All of these interactions demonstrate that the study of human behavior is a single project."

The early years were marked by important milestones. The Distinguished Lectures series was launched in 2013, engaging prestigious speakers to discuss cross-cutting themes with a wide audience. The award of the 2014 Nobel Prize in Economics to Jean Tirole was an inspiration for Toulouse researchers, and an additional guarantee of IAST's academic excellence. The creation of the digital chair in 2015 strengthened our focus on 21st-century challenges. As well as attracting new funding, IAST was increasingly demonstrating its ability to organize large-scale events and to solicit a network of leading international researchers.

IAST stands on the shoulders of many giants. Among these, the distinguished members of our Scientific Council have been an invaluable source of wisdom and guidance. Collaborations with other

research institutes – including joint recruitments and joint projects – have also greatly enhanced IAST's quality and reach. CAGT (formerly AMIS, anthropology), CERCO (cognitive sciences), SMS (social sciences), EDB (biology and evolutionary ecology), and the CNRS station in Moulis in Ariège (experimental ecology) are just some of the laboratories to have actively participated in IAST activities. Partnerships blossomed further afield in Brazil, Canada, China, Germany, Ghana, Switzerland, and the United States.

"IAST is an intellectually enriching community that deepened my commitment to interdisciplinary scholarship. It pushed me toward my current position in Ghana, where I work together with more economists and geographers than historical sociologists. It's also a space for fostering warm and supportive friendships. Whether in the kitchen or during coffee breaks, or on late summer afternoons by the River Garonne, I enjoyed exchanging ideas with some of the nicest and smartest people I've met"

**Kofi Asante, University of Ghana
former IAST sociologist**

"IAST has changed the way I ask research questions, incorporate theory to develop hypotheses and predictions, think through potential sources of bias during sampling and data collection, analyze and interpret data (especially with respect to making causal inferences), and contextualize findings for a broad audience. It is highly unlikely that a traditional anthropology department would have had such a profound and lasting impact on my approach"

**Jonathan Stieglitz,
IAST anthropologist**

Despite rapid growth in its international reputation, IAST has retained its start-up dynamism. Its relatively small size is particularly conducive to interdisciplinary brainstorming, says psychologist **Astrid Hopfensitz**, who was one of the first links in the chain. "IAST should stay flexible and evolve, allowing topics, methods and research questions to bubble upwards. I still miss the early seminars when we all fit around one large table: Everybody could freely interrupt and discussions went back and forth." By 2017, the Institute had reached its "steady state" size that hovers at around 50 active researchers, plus non-resident faculty based in the Toulouse area. Escaping the "silo effect", researchers work cheek by jowl with different fields, regularly bumping into new ideas in corridors, courtyards, or over coffee. The academic electricity crackles, too, with the jolt of unexpected perspectives supplied by frequent visitors from top-flight research centers.

A major landmark was reached in 2018 with the launch of the new TSE-IAST research school, which has increased the interdisciplinary focus of TSE research training. IAST maintained its own autonomous budget and continues to recruit researchers at the postdoctoral, assistant professor and senior researcher level. With core funding assured until 2028, IAST was able to strengthen its long-term



scientific vision, dissolving its disciplinary programs altogether and developing its governance structure to include more transversal initiatives. The expanded TSE doctoral program now involves more teaching by IAST economists, political scientists and anthropologists.

Frontier research in social science has been on a roller-coaster ride in recent years. The great political and social upheavals of the digital era have fueled skepticism towards experts and the authority of the scientific method. "Researchers are increasingly realizing that we cannot rely on the deference of citizens to fund our research," says **Paul Seabright**, "and they are taking the effort to explain to a wider public the reasons why rigorous evidence-based policy yields better results than the unfiltered gut-instinct of political decision-makers. But it can also be harder for our voices to be heard over the surrounding noise."

Above all, the Covid-19 pandemic brought challenges no one had imagined. Researchers took on the daunting task of analyzing the impact of an unprecedented crisis, and contributing to policy discussion, while suddenly confined to their homes. Lockdown is anathema to IAST's way of working, which depends on informal personal contact for open and flexible discussion, in-person seminars

and conferences, and a large number of international visitors. Those conducting field research have encountered severe obstacles, including the difficulties of data collection, and were forced to develop creative solutions. The continued productivity of IAST teams over the past two years is a testament to their ambition and ingenuity.

Thankfully, researchers have at last been able to return to IAST's new waterfront building whose brick facades, sky cloister, and inviting niches blend so beautifully into the historic cityscape of Toulouse. Winners of architecture's prestigious Pritzker Prize, **Yvonne Farrell** and **Shelley McNamara** designed this energy-efficient structure to maximize interaction between researchers but its innovative spaces were forced to close shortly after opening in November 2019 due to the pandemic. Today, the experimental lab, seminars and meeting rooms are alive again with interdisciplinary discussion, and the state-of-the-art auditoriums play host to long-postponed international conferences.

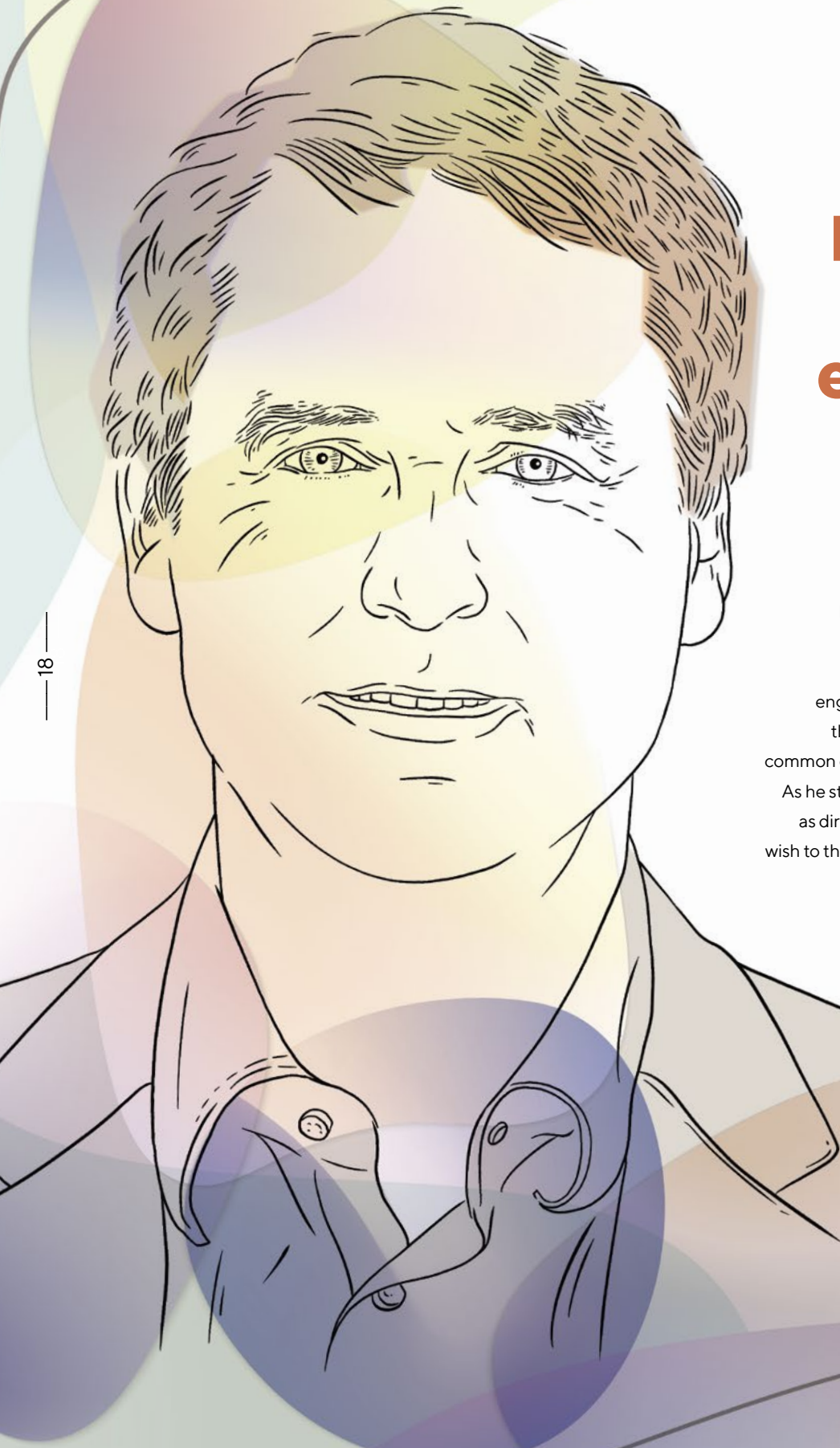
With renewed optimism for 2022 and beyond, we welcome the appointment of **Ingela Alger** as IAST director. She has been a key player in the IAST project, pioneering its "Biology and Economics" research program and the introduction of interdisciplinary teaching at TSE-IAST, as

well as establishing the Economics and Biology Workshop as a major event in the international scientific calendar. We also congratulate **Jean-François Bonnefon** on his new role as scientific director, and as leader of the new "Expanded Morality" research team.

"The IAST has introduced me to many new methods and fields that I would otherwise never had a chance to interact with. I learned a lot from anthropologists and political scientists. Interdisciplinarity is necessary to advance scientifically and learn from the insights from other disciplines"

**Astrid Hopfensitz - EM Lyon
former IAST psychologist**

Over the past 10 years, IAST has often surprised even its own researchers. Attracting avant-garde talent from around the world, it has quickly become an exciting, effervescent forum that demonstrates the scientific value of combining disciplinary rigor with cross-disciplinary insight. Building on this success, what might be achieved over the next decade? We look forward, impatiently, to even brighter days ahead.



PAUL SEABRIGHT

RENAISSANCE MAN

Leading by example

From its very beginnings in the mind of Nobel prizewinner Jean Tirole, the strength of IAST has been its people. And no one better represents IAST's mission to break through scientific and international boundaries, and to engage young researchers to apply their different disciplinary skills to common challenges, than Paul Seabright. As he steps down after almost a decade as director, IAST staff and researchers wish to thank him for leading them on this 'beautiful adventure'.

The IAST project was only a year old when Paul joined as director in September 2012. Trained as an economist at Oxford, his prolific research output had already shown the illuminative value of mashing together insights from diverse countries, traditions and disciplines. His colleagues in Toulouse were quick to recognize a "Renaissance Man" of boundless erudition, curiosity and eloquence. "I don't know who was the first to call him that," says the new scientific director **Jean-François Bonnefon**, "but the phrase stuck. Paul has always been our resident polymath: whether you need someone to ask a clever question after a talk, to engage in thoughtful discussion with a visitor, or just a good book recommendation, you can always count on Paul. He is the perfect personification of the IAST spirit."

Perhaps even more than his ability to bring together abstract ideas, it was Paul's warmth and skill at bringing together brilliant young minds that secured IAST's future. **Astrid Hopfensitz** was IAST's first psychologist and has fond memories of animated discussions in the early days: "Paul held everything together in many ways. He could easily rephrase a person's research agenda and thus introduce newcomers and visitors in a way that made you want to meet these people." Paul's commitment and pastoral talents fostered the development of countless researchers. "He is an effective and passionate leader," says law and economics expert **Daniel Chen**. "Motivated, empathetic and nurturing, he helped IAST researchers to be the best they can be."

"Paul is a very special, estimable and understanding person," agrees psychologist **Gladys Barragan-Jason**. "I am still impressed by his ability to find something relevant or funny to say about everyone and every subject. This makes him a great interdisciplinary director!" She was particularly touched by his unconcealed joy at the news of her daughter Mina's arrival: "I still remember his congratulations and his kiss!" Paul's celebration of the arrival of a new baby to the IAST family – praising the "contribution to fitness" – also struck a chord with historical sociologist **Kofi Takyi Asante**. "Since returning to Ghana, his catchphrase always comes to mind anytime I meet a new parent. I dearly miss my time at IAST, the cross-disciplinary conversations and Paul's excellent sense of academic humor."

It hasn't always been fun, says former scientific director **Karine Van Der Straeten**, but Paul's drive and leadership kept the wheels turning through the inevitable setbacks: "Among all of Paul's qualities, perhaps what I like most is his ability to demonstrate a great entrepreneurial ambition while keeping a sense of perspective and a healthy emotional distance from events." As administrative manager, **Delphine Pouts** witnessed up

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Jean-François Bonnefon, IAST Scientific Director

close how the IAST community was energized by Paul's work ethic and infectious enthusiasm: "I have been very impressed by his great capacity for work and his willingness to devote time to students, researchers, staff members, not forgetting all his other duties."

IAST was built on inspiration, as well as perspiration. Anthropologist **Jonathan Stieglitz** compares Paul's creative approach – as coauthor, project leader, mentor, manager, or teacher – to that of a master chef. "He begins with an ambitious vision (the final menu) and a well-conceived plan (for example, sourcing ingredients), using a blend of traditional and out-of-the-box thinking (recipe variants). Paul places extremely high value on the presentation of a product, and on customer service. Sure, sometimes the kitchen may catch fire, but rather than serving as a deterrent to continue working, this creates novel opportunities for rebuilding and discovery. Perhaps not surprisingly, Paul happens to be a talented chef too!"

This creativity often pushed IAST researchers in unexpected directions. **Astrid** recalls Paul's penchant for "crazy, unconventional ideas" such as a project to hire actors to interview people for fake job interviews. Political scientist **Charlotte Cavallé** says he taught her to think differently: "Paul was adamant I sign up for a trip to see prehistoric paintings. The guide showed us two very similar bison-like drawings, but carbon time stamps indicated they were separated by at least a thousand years. I had never experienced time in such a way, or fully grasped the crazy speed at which we now live. It was humbling. And all part of Paul's plan to have us think about big, important questions."

Introducing evolutionary biology to the IAST blend was another unconventional move. "It made perfect sense, given Paul's longstanding interest in evolutionary theory," says **Ingela Alger**, the new IAST Director. "True to his willingness to test interdisciplinary boundaries, Paul welcomed the hiring of post-doctoral researchers working on species other than Homo sapiens. This has become a most stimulating part of our intellectual mix. Paul's mark on IAST is indelible, and his shoes are intimidatingly big to fill."

From everyone at IAST, thank you, Paul, for your extraordinary leadership, kindness, and example.



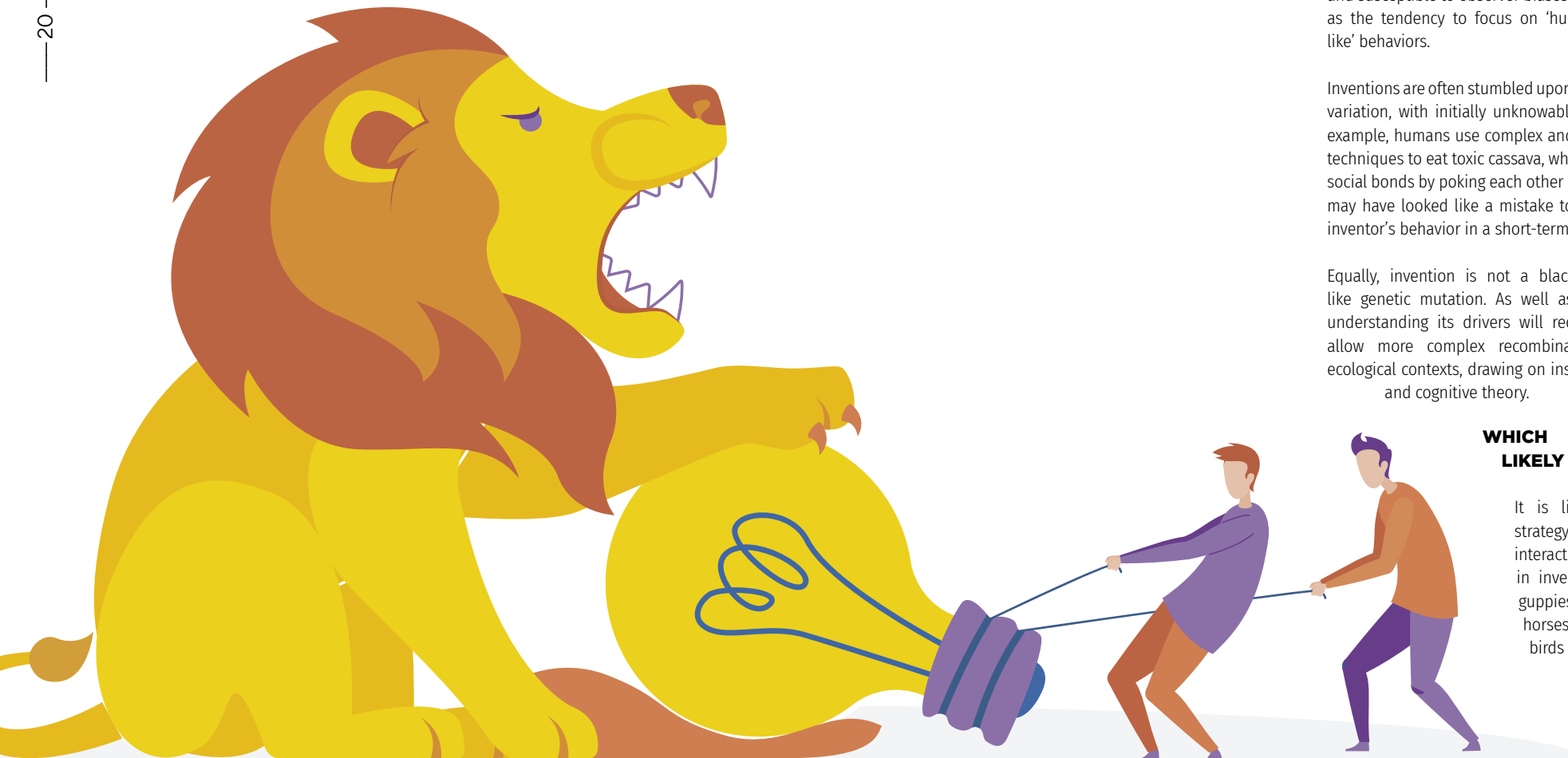
SABINE NÖBEL

ANIMAL INVENTION

How do new ideas evolve?

The ability to innovate – and to learn from other innovators – has been central to human success in colonizing new habitats, and is likely to be an adaptive strategy for many other species. Where do new ideas and practices come from? What makes them spread? Research by behavioral ecologist Sabine Nöbel (IAST and Laboratoire Evolution & Diversité Biologique) looks for answers, revealing how certain fish and fruitflies copy the mating preferences of fellow females. In a new paper by an international team of anthropologists and biologists, she highlights crucial gaps in the study of animal ingenuity and calls for a broader, more cohesive, cross-species approach.

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HOW IMPORTANT IS INNOVATION IN THE ANIMAL WORLD?

It is very difficult to assess innovation as an adaptive strategy because of the paucity of existing data. Octopuses and other cephalopods appear to be extremely inventive as individuals, but have little interest in passing on their discoveries. Other species may be less inventive individually, yet able to transmit and stabilize the rare inventions that do occur. Successful innovation requires both skills, but social learning has typically been regarded as the fundamental driver for the emergence of traditions and culture. Our paper outlines an agenda for redressing neglect of the role of invention.

WHAT ARE THE CHALLENGES OF MEASURING CREATIVITY?

Many experiments use puzzles and rewards to investigate insightful problem-solving, but the range of possible behaviors is restricted by the task itself. Researchers have also attempted to document the frequency and range of a species' inventions, but this requires careful, long-term observation. Comparative data are scant, collected with diverse methodologies, and susceptible to observer biases such as the tendency to focus on 'human-like' behaviors.

Inventions are often stumbled upon by chance, or by tinkering variation, with initially unknowable costs and benefits. For example, humans use complex and non-intuitive processing techniques to eat toxic cassava, while capuchin monkeys test social bonds by poking each other in the eyes. Such behavior may have looked like a mistake to a researcher coding the inventor's behavior in a short-term study.

Equally, invention is not a blackboxed, random process like genetic mutation. As well as more naturalistic data, understanding its drivers will require richer models that allow more complex recombination of behaviors and ecological contexts, drawing on insights from computational and cognitive theory.

WHICH INDIVIDUALS ARE LIKELY TO BE INVENTORS?

It is likely that age, learning strategy, and personality interact to produce variations in inventiveness. Evidence from guppies, hyenas, raccoons, horses, and several species of birds suggests that traits like

persistence and curiosity play an important role. Morphology and social network position can also increase opportunities for inventors.

Individuals of different ages may also learn differently. For example, some researchers argue that human children have more flexible and exploratory learning strategies, whereas adults are more efficient. My coauthor Susan Perry conducted the only observational study in the wild that explicitly attempts to record inventions. It found that older capuchin monkeys were more likely to invent new forms of social interaction, while younger capuchins were more likely to invent new foraging behaviors and ways of manipulating their environments and bodies.

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IS NECESSITY ‘THE MOTHER OF INVENTION’?

It has been suggested that individuals are likely to be more inventive if they have less access to resources and opportunities, perhaps because they are weaker, subordinate, or too young to compete effectively. At the same time, greater access might promote attempts to exploit them, perhaps using new tools. Another hypothesis is that inventive individuals are higher ranking, in better condition, and of the larger sex, because they need to spend less time foraging. These contextual

factors are not mutually exclusive, and evidence for all of them is limited.

WHICH SOCIETIES PROVIDE FERTILE GROUND FOR NEW IDEAS?

Group characteristics such as age structure – and how individuals of different ages learn from others – can profoundly affect the spread of inventions, depending on the type of behavior. Some inventions, like internet memes or simple behaviors, are easily transmitted, and spread like an infectious disease. Other inventions, like cooking cassava, follow a 'complex' contagion dynamic, where a single exposure is not sufficient for acquisition. In the first case, information may spread more rapidly in dense social networks where individuals have more interactions and opportunities to observe each other. Clusters and homophily are predicted to impede information flow, although clustering can be beneficial in more complex dynamics that offer social reinforcement.

FIND OUT MORE

Sabine's paper 'Not by transmission alone: the role of invention in cultural evolution' is published in the July 5 issue of *Philosophical Transactions of the Royal Society B*, alongside 'Beyond social learning', coauthored by IAST researchers Manvir Singh and Maxime Derex.

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BLACK MAGIC

Why do we fear the supernatural?

Who's afraid of the big, bad witch? Drawing on fieldwork among Indonesian shamans and insights from across the behavioral sciences, IAST cognitive anthropologist Manvir Singh has pioneered quantitative cross-cultural analysis of beliefs about black magic and other mystical traditions. From evil sorcerers to modern conspiracy theories, he explains why these socially corrosive ideas continue to cast a powerful spell.

Manvir Singh interviews a Mentawai man as a part of his fieldwork in Indonesia.

Most Westerners are unlikely to consider magic beyond the realm of Harry Potter and other whimsical modern entertainments, but beliefs in the occult continue to inspire acts of bloodcurdling violence around the world. While contemporary persecution of accused witches is largely undocumented, a 2009 UN report gathered a chilling collection of reports and national statistics. In Tanzania, for instance, a leaked government survey reported 5,000 witch killings between 1994 and 1998.

Even in a developed country such as the UK, more than 1,600 annual cases of witchcraft-related child abuse were reported in March 2018.

How do supernatural beliefs compare across societies? For his 2021 paper in *Current Anthropology*, Manvir designed a dataset to systematically compare notions about witches, sorcerers and possessors of the evil eye from 60 societies, demonstrating how beliefs recur and overlap in every human culture. Witches and other mystical malefactors exhibit many common features, notably their threatening and morally abhorrent nature, as depicted in graphic accounts of cannibalism, sexual depravity and defilement of human bodies.

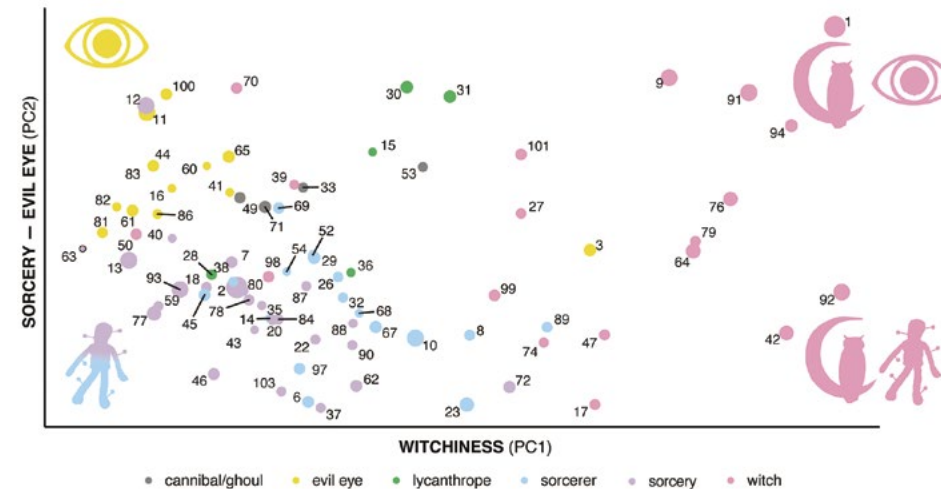
Manvir's work offers a series of testable predictions about how shifting conditions should affect black-magic beliefs. He argues that distinct cultural selection

processes, often interacting, encourage the spread of such convictions. To begin with, magical traditions tend to be retained when they are psychologically appealing. "People adopt superstitions because of a predisposition to note spurious correlations between cheap actions (such as wearing special underwear) and important, unpredictable outcomes (such as winning a football game)," he writes. "As they then select among superstitions, they choose the most compelling ones." Black magic may also serve believers' agendas by offering simple explanations for mysterious calamities, such as illness or death, or by demonizing rival groups. A baby-devouring witch is a particularly well-designed justification for mistreatment of "devilish" others.



MYSTICAL MALEFACTORS

Manvir's logistic analysis compares myths about mystical harm from 58 societies around the world. Each point represents a belief; each image refer to the features that characterize its quadrant. The eye is for evil eye myths (unintentional harm through stares or words), the effigy for sorcery (learned magic), and the owl for witchiness (superhuman abilities, moral abhorrence, threat).



When supernatural agents are believed to punish anti-social actions, such beliefs may be useful for motivating others to cooperate. Cognitive and evolutionary researchers have generally considered these notions to be peculiar to Christianity, Islam, and other major world religions. But recent studies, including Manvir's fieldwork, challenge the view that the "small gods" of animist traditions lack moral concerns. In particular, his 2021 paper in *Evolution and Human Behavior* shows that a punitive crocodile spirit is widely believed to

"Witches and shamans have taken on new forms, but the cognitive appeal of mystical narratives is still strong. As long as people see them as useful for achieving their goals, the ghosts of our evolutionary past will continue to haunt us"

attack Mentawai people who fail to share meat within their clan. This "Sikameinan" spirit brings illness and misfortune to wrongdoers, who then need the help of a shaman and healing ceremonies to recover.

Manvir develops his investigation of the social and psychological appeal of black magic in a forthcoming paper in *Current Opinion in Psychology*, written with Léo Fitouchi (ENS, Paris). In their model, "producers" strategically endorse supernatural punishment beliefs to manipulate others: Shamans, for instance, can leverage such ideas to influence others' behavior and gain sexual favors,

food, and status. "Recipients" accept these beliefs because they are cognitively compelling: As well as explaining misfortune and appealing to intuitions about retribution and fairness, mystical narratives may contain threatening information that we are reluctant to challenge. Recipients are themselves motivated to further endorse beliefs by strategic incentives similar to those of producers. Both sides can benefit from using beliefs as a signal of trustworthiness. Modern societies without strong beliefs in magic are far from

immune to the evolutionary processes and cognitive biases that Manvir identifies. Amplified by digital technologies, recent years have seen the continued spread of corrosive mystical explanations with infectious appeal, such as anti-Semitic conspiracy theories or the role of powerful governments in masterminding misfortune.

Similarly, the shamans that are omnipresent in hunter-gatherer groups have analogues in contemporary Western society. "We may no longer call on trance dancers to heal illness or make rain," Manvir observes, "but we still look to a wide range of pseudo-experts – in the form of money

managers, psychics, sports analysts, political pundits, economic forecasters, esoteric healers – who promise to achieve the impossible, to control uncertainty, and forecast unknowable futures. And like their counterparts throughout history, these modern shamans compete among themselves, performing to convince people of their special abilities."

Witches and shamans have taken on new forms, but the cognitive appeal of mystical narratives is still strong. As long as people see them as useful for achieving their goals, the ghosts of our evolutionary past will continue to haunt us.

FIND OUT MORE

Manvir has also conducted cross-cultural research on the universal features of music. For his academic publications, popular essays, and evolutionary artwork. > www.manvir.org



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