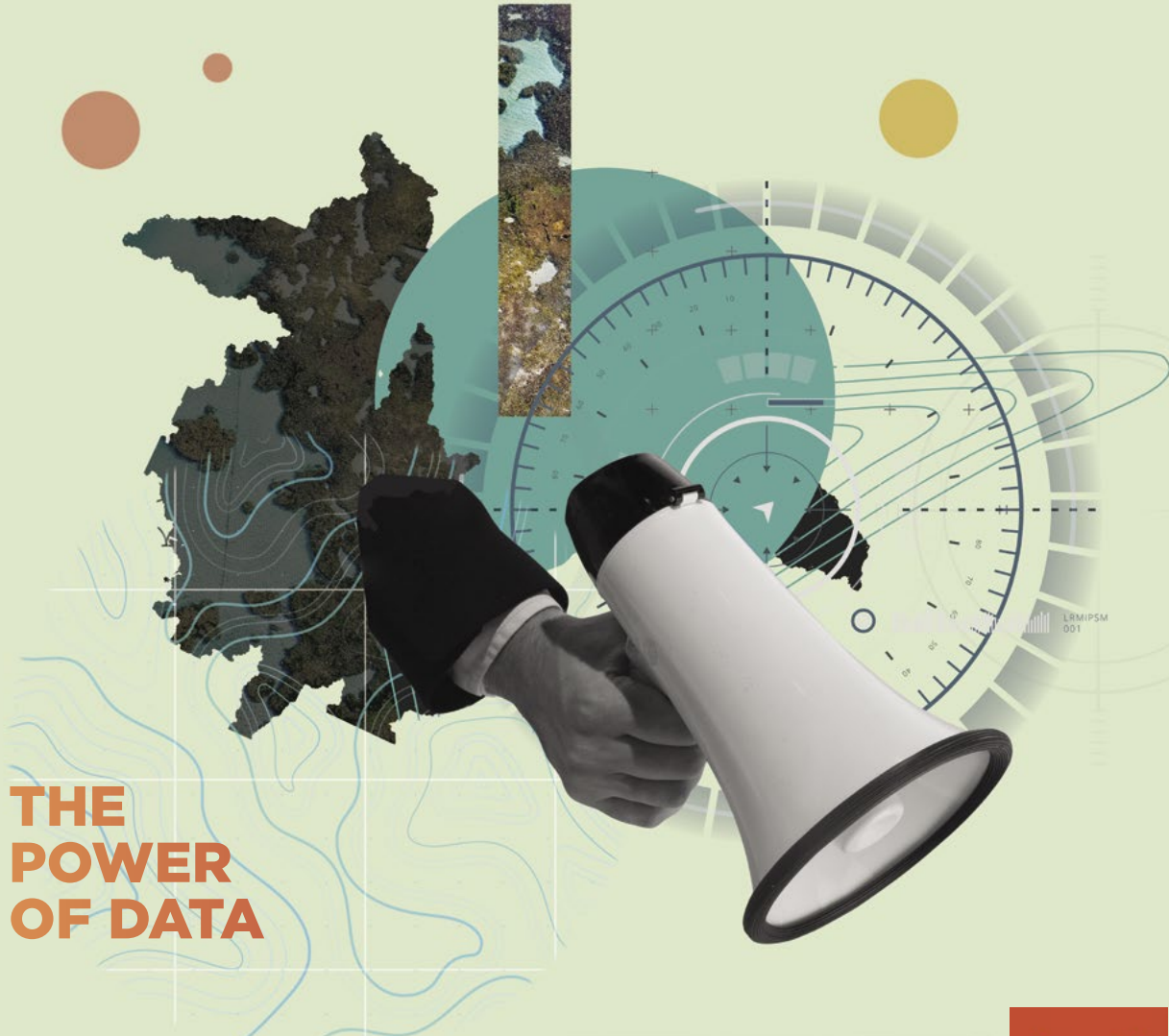


# IAST MAGAZINE

INSTITUTE  
FOR ADVANCED  
STUDY IN  
TOULOUSE

WINTER 2022/23 #20

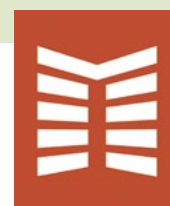
## THE POWER OF DATA

A hand holding a megaphone is positioned over a map of Europe. The map is overlaid with a large, semi-transparent clock face and various data lines and circles, suggesting a theme of time, data, and communication. The background is a light green color with several orange and yellow circles of different sizes.

HAS DIGITAL  
TECHNOLOGY MADE US  
BETTER OFF?

VISIGOTHIC  
RELICS  
UNDER IAST

HOW HAS WAR IN  
UKRAINE AFFECTED  
RESEARCH?



In this  
ISSUE

Semestrial magazine  
of the Institute for Advanced  
Study in Toulouse

Commissioning editor  
Ingela Alger

Editor-in-chief  
Jennifer Stephenson

Production manager  
Tiffany Naylor

Reporting and editorial  
contributions  
James Nash and Caroline Pain

With the help of  
Patrick Durkee, Marijn  
Keijzer, Sreemati Mitter and  
Emmanuelle Boube

Iconography  
© Unsplash, © AdobeStock,  
© Freepik, © StudioTchiz, © JC  
Caslot © Alan Krakauer, © Didier  
Paya, Inrap, © Nathalie Pouget,  
Inrap

ISSN number: 2554–2141

Graphic design, layout  
Agence Blackpaper  
blackpaper.fr

400 magazines printed  
on 100% recycled paper  
Iso14001 – Imprim’Vert



KEEP IN  
TOUCH

Contact us  
IAST  
1, Esplanade de l’Université  
31080 Toulouse  
Cedex 06, France  
+33 (0)5 67 73 29 76

Follow us



This magazine has been funded  
by a French government subsidy  
managed by the Agence Nationale  
de la Recherche under the  
framework of the investissements  
d’avenir programme reference  
ANR-17-EURE-0010.



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  
21<sup>st</sup> 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 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.

IAST MAG #20  
CONTENTS

IAST in the news Prizes & press	4
Events	5
Newcomers	6
Podcasts	8

THE POWER  
OF DATA

Learning from the past Victor Gay	12
Digital divides Marijn Keijzer	14
Follow the money Sreemati Mitter	16
Angry birds Samuel Snow	17
Family secrets Lauren Bader	18
Collective learning Maxime Derex	20

Visigothic relics under IAST | 22

Editorial

Data brings  
rewards, risk and  
responsibility

Quantitative social sciences have seen a seismic shift in the past few decades: the exponential growth of data, coupled with advances in research methods, statistical techniques, and computing power, has provided social scientists with unprecedented opportunities to study social phenomena. Abundance of data has supercharged our ability to test theories and hypotheses, to assess the generalizability of previous findings by attempting to replicate them, and to provide evidence-based policy recommendations.

Data is also at the heart of IAST’s mission: interdisciplinary collaboration. IAST’s support for data-driven enquiry has a crucial role in enabling researchers from diverse disciplines to interact, learn about cutting-edge scientific methods and share insights on patterns, relationships, and causal mechanisms. IAST researchers are further building on advances in data analysis that facilitate exchange with experts in fields beyond those focused on at IAST, such as medicine and computer science. But while the powerful tools of data analysis bring great rewards to social scientists, they also entail responsibilities, risks and pitfalls, such as the spread of misinformation. At IAST we are adamant about ethical standards for collecting and using data.

In his opening article of our ‘data’ dossier, economic historian Victor Gay identifies a key problem: the scientific value of sharing data in a reusable form still lacks recognition. We salute Victor’s continued efforts to redress the balance, for which he has won France’s inaugural Open Science Award for Research Data. Bravo!

This issue of IAST magazine also showcases the ingenuity with which our researchers are harnessing the power of data. Computational sociologist Marijn Keijzer, for example, hopes his efforts to understand how social media shapes our opinions will help policymakers and software designers to reduce radicalization. Also in these pages, experiments by Maxime Derex draw on insights from multiple disciplines to unlock the mysteries of the emergence of complex societies.

At the same time, we wish to offer a window on IAST researchers’ painstaking efforts to collect data from the field. From studies of mating birds in Wyoming by biologist Sam Snow, to data on child-rearing practices in Ethiopia collected by psychologist Lauren Bader, to the value of individual stories in understanding historical events as shown by Sreemati Mitter, their publications are often the fruit of long, hard months in the field, archives or laboratory, in search of reusable data that requires great diligence and skill to collect, process, and analyze.

We hope you enjoy reading about their research as much as we enjoy working with them.



INGELA  
ALGER

IAST Director





## PRIZE

### IAST DIRECTOR WINS PRESTIGIOUS SCIENTIFIC AWARD

Congratulations to Ingela Alger on the silver medal from the French National Centre for Scientific Research (CNRS). First and formally an economist, Ingela was rapidly drawn towards a career working with various fields. She uses mathematical models to understand the evolution of humanity and won an ERC grant for her ongoing project 'Evolving Economics'. She is particularly interested in the formation of preferences that might explain moral, altruistic and family behaviors. The CNRS silver medal rewards the outstanding scientific contribution of researchers who are already internationally recognized.

## IN THE PRESS

### VALUE OF LIFE



Is it moral to kill someone to save somebody else? IAST Scientific Director Jean-François Bonnefon published an op-ed (in French) on the subject in the magazine *Science&Vie*. He sheds light on sensitive questions concerning self-driving cars: in case of an accident, should the car sacrifice its passengers to save pedestrians?



### CHAIN REACTION

In a podcast hosted by *The Conversation*, long-term IAST visitor Ruth Mace explains new research on the families of Tibetan monks that suggests celibacy might have surprising evolutionary advantages.



### MIRACLE WORKERS

Writing for *Wired magazine*, IAST researcher Manvir Singh observes that tech CEOs have made fasting and deprivation their own, in a process of "self-shamanification". This analysis is an opportunity to delve into Manvir's anthropological fieldwork on the recurrence of shamans, gods and witches in societies around the world.

## PIREN 2022

Majestic mountain peaks replaced the more familiar red-brick spires of the IAST skyline at the 7<sup>th</sup> Pyrenean Interdisciplinary Research Event, which provided an important opportunity for researchers to embrace new horizons and unfamiliar ways of thinking. Interdisciplinary collaborations require more interactions than mono-disciplinary ones, and in-person discussions are vital. Held at the Grand Hotel du Golfe near the beautiful Mediterranean port of Collioure, this year's three-day conference organized by IAST's Patrick Durkee, Marijn Keijzer and Manvir Singh, provided the stage for 21 speakers to talk about their research and introduce colleagues to fresh perspectives. Bonds were created, personally and professionally, that will benefit the Institute throughout the year.

This year's "methods forum" was central to the program of academic exchange. Fellows and faculty were invited to 'zoom out' and talk about their scientific discipline more generally, including the opportunities and challenges of different methods. What do developmental psychologists do in the field? How do we infer relational preferences from observed social networks? Can we use Likert scales to measure political preferences? When are our findings externally valid?

Discussions ranged from game theory informing our understanding of human behavior and evolution, the American civil war and anti-Black narratives, the effects of religious fasting, to applying the "Coleman boat"—a sociological tool for theory formation—to explicitly map out the focus and boundaries of interdisciplinary research programs.

These and many other interesting talks fueled vivid discussions and provided food for thought in diverse settings, as researchers discussed ideas while hiking to a nearby windmill and fortress, visiting a local winery, relaxing by the pool, talking late into the evening, or shivering in the early morning after a swim in the sea.





# Welcome to our new recruits

Interdisciplinarity thrives on fresh ideas, and the energy and enthusiasm of IAST researchers. Here, we present our latest crop of talented new research fellows, long-term visitors, and returning alumni.

## VISITING FELLOWS



**CHARLOTTE CAVALLÉ**  
POLITICAL SCIENCE  
September - December 2022

**“I am thrilled to be back at IAST to work with great researchers.”** Taking a break from teaching at University of Michigan, Charlotte returned to IAST for four months to continue her work on attitudes towards redistribution and the political impact of inequality, fiscal stress and immigration.



**ARTHUR SILVE**  
ECONOMICS  
September 2022 - June 2023

**“Spending a year at IAST, while being in close proximity with TSE, is heaven for me.”** Visiting from Université Laval, Arthur works on economic development and formal political economy mechanisms. Throughout the year, he will visit various French higher education institutions to deliver talks and create new collaborations.



## RESEARCH FELLOWS



**ANNE DEGRAVE**  
POLITICAL SCIENCE

**“IAST allows us to go deeper into our research and benefit from the insights of other disciplines.”** Anne looks at how the French state tackled problems like deforestation and measuring land value in the 19<sup>th</sup> century. She also studies the development of France’s welfare state during the Great Depression.



**JORDAN MOON**  
PSYCHOLOGY

**“I learn a lot here rather than getting the same insights from people with the same training.”** Jordan wants to surround himself with anthropologists, biologists and other disciplines. He investigates how people interact with cultural systems. How do individuals use religion as a social tool? Who benefits from moral judgments?



**MICHAEL DENLY**  
POLITICAL SCIENCE

**“I’ve already learned a lot from interactions with other researchers.”** Michael is thrilled to be able to collaborate with researchers from various disciplines. Michael’s research focuses on measuring corruption and external validity - i.e., how far statistical and theoretical inferences travel.



**ILARIA PRETELLI**  
ANTHROPOLOGY

**“IAST was my top choice because evolutionary anthropology can benefit from many other disciplines, like biology or psychology.”** Ilaria is interested in childhood both as a moment to learn complex sets of skills and a phase in which we become active parts of our families. Is childhood for learning? Is it for helping our parents?



**FELIX DWINGER**  
POLITICAL SCIENCE

**“The IAST is among the finest institutes for the social sciences in Europe. It is a melting pot of research disciplines, interests, and ideas. I expect it to be very inspiring.”** Felix’s research focuses on democratic backsliding and autocratic politics using game theory and causal inference from observational data.



**MICHELE ROSENBERG**  
ECONOMICS

**“The historical and cultural heritage in Toulouse is fascinating.”** Joining IAST for a year, Michele is interested in collective action and how small elites can convince the majority of the population to support causes that benefit them.



**SREEMATI MITTER**  
HISTORY

**“Coming back to IAST after some years away, feels both like coming home and discovering a new and refreshing place that feels so energizing.”** Returning to IAST for the third time, Sreemati’s work focuses on Palestinian financial history.  
[Read more on page 16](#)



**ALI SEYHUN SARAL**  
ECONOMICS

**“It’s been amazing! The interdisciplinary approach is a perfect match for my work.”** Ali studies how human cooperation can be fragile as people waver between self-interest and the interests of society. His experiments examine how social behavior is shaped by the beliefs and reactions of others.

# Has digital technology made us better off?

Following the success of our first podcast series, we continue our collaboration with the Bennett Institute at the University of Cambridge. Hosted by former BBC journalist Rory Cellan-Jones, 'Crossing Channels' invites international experts to offer interdisciplinary perspectives on the great challenges facing society. To kick off the new season, Nobel laureate and IAST founder Jean Tirole joined fellow economists Jacques Cr mer (TSE) and Diane Coyle (Bennett Institute) to discuss the impact of digitalization.

**28** hours. That's the amount of time we spend online every week. Our lives increasingly revolve around digital technology, and yet, according to Diane, "There does not seem to be any direct payoff for our living standards." This is the "productivity puzzle", she observes: "People and businesses are using this technology, there are new business models, but why isn't it making us better off according to the figures?"

For Jean, it is a matter of measurement. Or rather, mismeasurement: "All kinds of household productions are not accounted for in GDP," leading to an underestimation of the growth rate up to 0.7% per year". Jacques gave the example of a WhatsApp video call with his granddaughter on her 17<sup>th</sup> birthday: "Within three minutes, I was connected and looked at her blowing the candles. I would have happily paid  50 for this."

Diane explains that this illustrates how the data does not account for many of the products and services that we consume without paying: "Today people are doing banking and travel agency for themselves online." Going several decades back, she gives another example of a productivity shift that had opposite consequences: "In 1950s and 60s, women who had done unpaid household work bought washing machines and went out to get paid work that allowed them to buy all kinds of other things."

Today, the scene is completely different, partly because of tech monopolies. "There's a real sense about these very big companies having excessive power over our lives," explains Diane. For example, tech giants are buying up startups that might be effective competitors, and they are preventing innovation happening in other areas by hoovering up all the revenue.

The omnipresence of digital technology raises another issue: regulation of Big Tech firms. These are here to stay, said Jacques, so the challenge is to "clean up" the business models of US firms using regulations, including measures to promote fair competition. Diane listed a series of measures that could help: "Stop the acquisitions occurring, ensure enough interoperability so that people can switch easily and transfer content and make data open."

Jacques expressed skepticism over the role played by policymakers: "European politicians like to think about how unfair the Big Tech companies are, but they don't like to speak about their responsibility, which is the innovativeness of European industry." But he described himself as a systematic optimist. "The digital revolution has been extremely good for humanity, and the improvement in communications is fantastic. Of course, there are problems and we need to try to solve them."

And what if no regulation were implemented? Could this lead to something more extreme? A digital dystopia, as Jean described in a recent paper. "Digital technologies have brought down the marginal cost of monitoring, of storing and analyzing AI-sourced data". The Nobel Prize winner insisted on the importance of a state of law. "Like any technological revolution, there is a lot of good stuff coming in. We just have to find a way of fighting the bad stuff."

Digital technology has increased inequality, said Jean. "We have not yet put in place all the social organization, legislation and regulation needed, to make sure that the technologies work for everybody. The optimistic viewpoint is that these debates are happening. Economists are taking part in the regulatory discussions, but lots of people are grappling with what we think are the downsides of the tech and, in time, we will learn how to make them work for us."

## SPECIAL EDITION: CROSSING CHANNELS IN KYIV



# How has war in Ukraine affected research?

For the second time, a special edition of Crossing Channels has been organized in response to the invasion of Ukraine. In an early episode, our podcast's experts considered how the people and government of Ukraine responded during the first 10 days of the war. Now, as we grimly approach the first anniversary of Putin's "special military operation", Rory Cellan-Jones welcomes Tymofiy Mylovanov, president of the Kyiv School of Economics (KSE), and the return of Nataliia Shapoval, head of KSE Institute. They discuss how their research priorities have shifted during the war, how the university has operated through these challenging times, and why the higher education system is integral to Ukraine's future.

## Don't miss the latest episodes

### OCTOBER 2022

#### How much do people care about inequality?

Charlotte Cavaill  examines income and regional inequality, and the effectiveness of different policy approaches, with Ailbhe McNabola (Bennett Institute) and Jack Shaw (Bennett Institute).

### NOVEMBER 2022

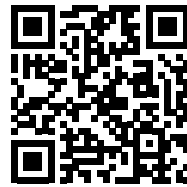
#### Wellbeing at work: whose job is it to fix it?

Zoe Purcell joins Gordon Harold (Cambridge) and Laura Nurski (Bruegel) to discuss mental wellbeing in the workplace and what policymakers can do to promote a healthy workforce.

### JANUARY 2023

#### Why are stories important for society?

Manvir Singh and Sarah Dillon (Bennett Institute) discuss the value of stories, the dangers of endorsing them, and the need for narrative evidence to inform decision-making.



Find out more at:  
[iaist.fr/podcast](https://iaist.fr/podcast)







# The power of data

**D**igitization has revolutionized 21<sup>st</sup>-century research, opening the doors to ever more complex, giant datasets, and inspiring the development of sophisticated tools, methods and theoretical models. But in the rush to mine these rich seams of information, new challenges have arisen: not least the replication crisis, as evidence emerges that the results of many studies are near impossible to reproduce. Working on questions that transcend disciplinary boundaries, and in teams that use a wide variety of different scientific techniques, IAST researchers are keenly aware of the importance of following rigorous principles to ensure replicability. Data are handled with particular care, as they serve as a language for IAST's disparate disciplines to work together. For this special dossier, we asked some of our gifted researchers to discuss these challenges and to showcase the wonderful variety of ways in which data-led research can answer the questions that concern us all.

---

<b>Learning from the past</b> Victor Gay	12
<b>Digital divides</b> Marijn Keijzer	14
<b>Follow the money</b> Sreemati Mitter	16
<b>Angry birds</b> Samuel Snow	17
<b>Family secrets</b> Lauren Bader	18
<b>Collective learning</b> Maxime Derex	20



VICTOR GAY

LEARNING FROM THE PAST

# Social science depends on reusable data

Winner of the French government’s inaugural Open Science Award for Research Data, economic historian Victor Gay has pioneered reusable data infrastructures based on novel archival material. As well as facilitating research by others, this groundwork allows him to explore the long-term consequences of the First World War on female labor and gender norms. Here, he discusses the motivation for his award-winning data paper, and why history can provide better facts than the present.

WHY IS IT SO IMPORTANT FOR SOCIAL SCIENTISTS TO USE DATA CAREFULLY?

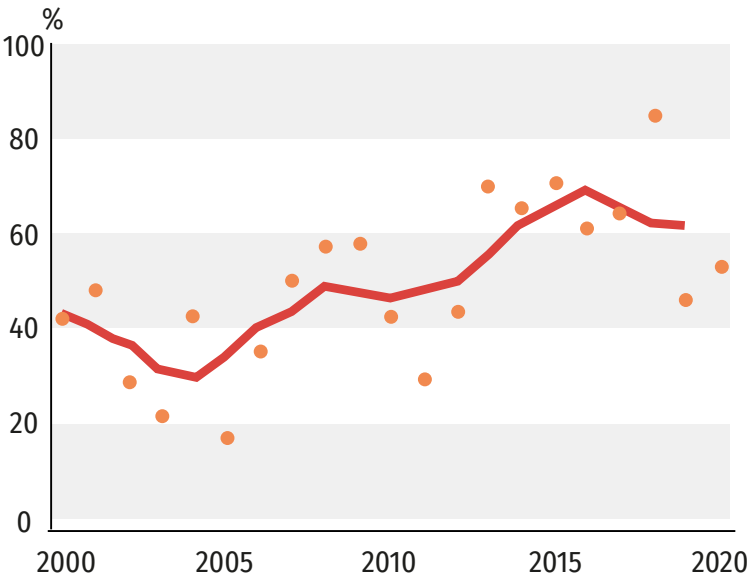
Over the past decade, the unprecedented production of statistics on social facts and their availability via online data catalogs has secured a prominent place for the use of data in social science research. However, this quantitative shift has also engulfed the social sciences in the replication crisis. As multiple biases can affect the publication process – such as manipulation of p-values, low statistical power, or

confirmation bias of authors and reviewers – many published results are a statistical illusion ("false positives"). Efforts to address this problem include data management plans, pre-analysis plans, and meta-analyses. But the *sine qua non* for ending the crisis is the ability to replicate the results of published research. This is not yet the case: for example, Chang and Li (2022) show that only half of macroeconomics articles published in reputable journals are replicable. And the ability to replicate a study requires that its data is available to the replicator.

HOW CAN WE INCENTIVIZE THE PRODUCTION OF REUSABLE DATA?

Respecting FAIR principles – which promote replicability by requiring that data are findable, accessible, interoperable, and reusable – has been at the heart of French national research policy for several years. However, despite the need for institutional support, most of the burden of producing FAIR data falls on researchers. Unfortunately, the scientific value of data production is insufficiently recognized: evaluation committees still prefer traditional research articles, while peers often reuse data without citation.

My data paper ‘Mapping the Third Republic’ addresses these issues in the context of a historical period (1870-1940) on which quantitative research has been boosted by the digitization of a wealth of administrative statistics. However, analysis of geolocalized historical



**Number crunchers:** This graph plots the rising number of articles in the *Revue française de sociologie* containing at least one table or graph presenting statistics. Between 2005 and 2020, the proportion of such articles in the main economic history journals remained stable, at around 90%, but rose from 5% to 13% in *American History Review*.

data requires a reference framework or a common geographic information system. For each researcher to produce this individually is extremely difficult and time consuming, leading to approximations, and a lack of interoperability and replicability. The reference systems available in my database offer a solution to these problems by providing FAIR data for which the construction process is precisely documented.

By describing the process of data production, data papers help the scientific contribution of data producers to be recognized. They allow data to be easily referenced, and improve the relevance and scope of potential re-use. As long as they are peer-reviewed, data papers generate incentives for improving data production and description.

HOW CAN HISTORICAL DATA HELP TO SOLVE TODAY’S POLICY PROBLEMS?

History, especially economic history, generally provides us with many more experiences, more facts, and, surprisingly, better facts. For example, because of anonymity rules, demographic data from the past are often more extensive and of better quality than those from the present. This enables us to study events in much more depth. For example, to understand the long-run consequences of being born during the Covid-19 crisis, we might look at the 1918 influenza epidemics. With all this information at the individual level in the past, we can follow people over many decades. With the right methods, we can learn from this and develop better policies.

IS HISTORICAL DATA RELIABLE?

One of the challenges for economic historians is the external validity of the mechanisms that we try to identify empirically. The further you go back in history, the more access you have to facts and episodes that might be relevant. But the mechanisms can be conditioned by historical context in ways that become harder to observe and interpret as you go back in time.

History can sometimes give us clearer data. For example, it's extremely hard to understand the role of information flows on stock market volatility because modern information is everywhere and extremely fast. But if you go back to when markets first emerged, there is a unique opportunity to study them in perhaps their purest form. Information could not travel like lightning in the 18th century, so you can isolate the information flow between England and the Netherlands to see how it affected stock prices.

The key is to be very aware about the context and this requires historical expertise. Even with facts from early 20th-century France, you have to be very careful. Categories of female labor in the Census were only emerging and the concept of the labor market was new. In the most detailed returns there are about 1,500 occupations: 1,300 male, and the rest female. These statistics are biased because the statisticians who built them cared much more about the work of men.

FIND OUT MORE

‘Mapping the Third Republic’ and other publications by Victor can be accessed on the IAST website. For Victor’s data projects, visit his personal website. For excellent advice (in French) on how to write a data paper, see ‘Un data paper en SHS’.







MARIJN KEIJZER

## DIGITAL DIVIDES

# Is social media tearing us apart?

From Donald Trump to Jair Bolsonaro, the rise of extremists has fueled fears that digital communication is fracturing 21<sup>st</sup>-century democracy, splitting us into filter bubbles, echo chambers and radical rabbit holes. IAST sociologist Marijn Keijzer uses experimental, social network and digital trace data to understand how opinion polarization, segregation or consensus emerge online. He tells IAST magazine why his research makes him optimistic, both for the future of sociology and the vitality of public debate.

## HOW CAN A COMPUTATIONAL APPROACH BENEFIT RESEARCH IN SOCIOLOGY?

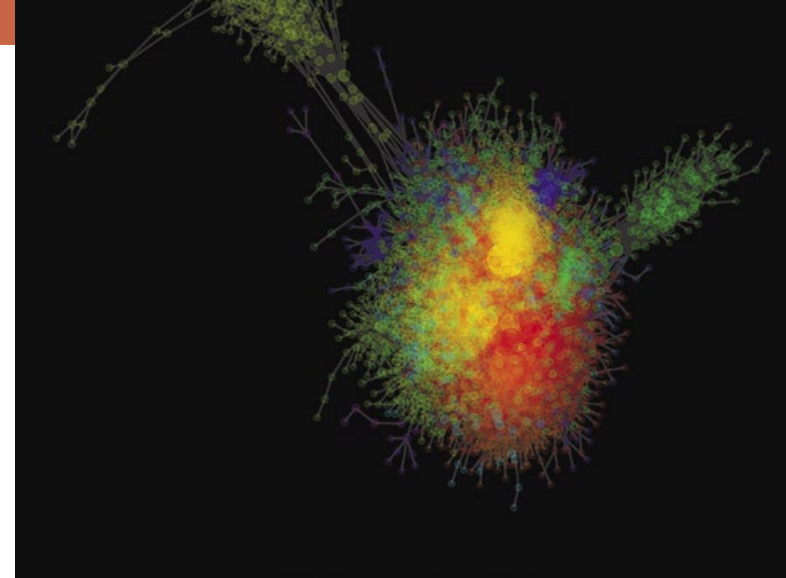
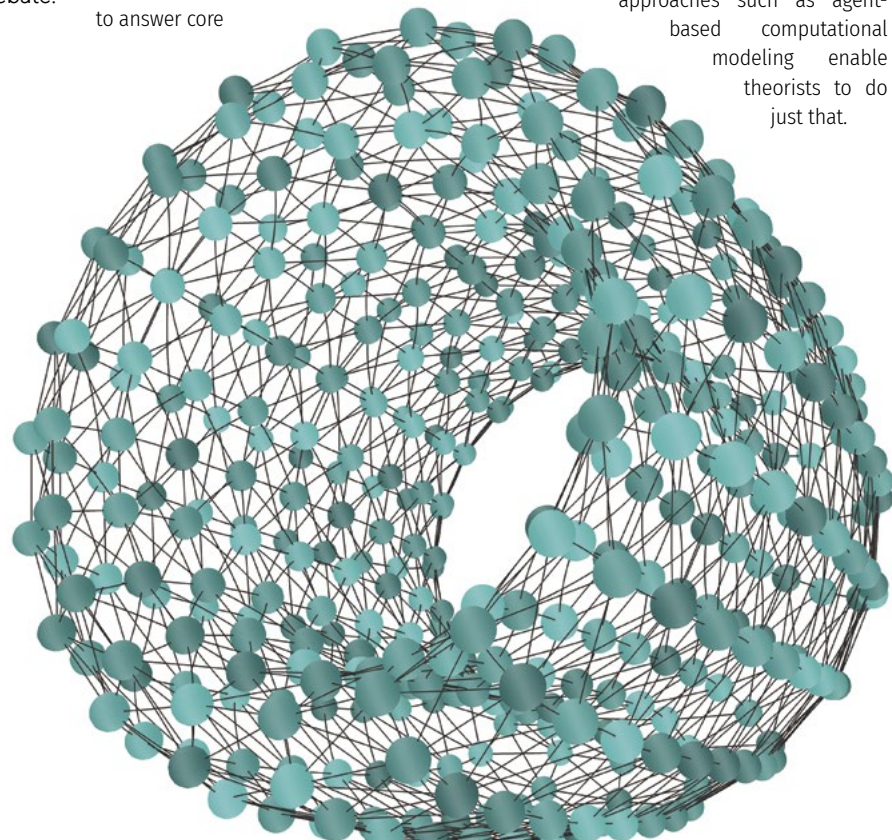
The computational revolution has greatly impacted our understanding of social phenomena. Empirical sociologists have benefited from large-scale behavioral data, such as the digital traces we leave on the internet. Social media networks, forum discussions, and search engine queries are goldmines for sociologists who want observational data rather than traditional self-report surveys. To sociologists' delight, digitization of data has expanded beyond the internet. Seminal contributions in computational social science have used phone records, mobility data and administrative data to answer core

questions on inequality, cohesion and rationality. With more complex data, studies using sophisticated statistical models, machine learning or computationally expensive social network modeling techniques have become more norm than exception in the discipline's top journals.

For theoretical sociologists, simulations with progressively more computational power have enabled theorizing about actor-level mechanisms behind macro-level phenomena. Analytical sociologists, for example, have long called for this actor-based understanding of how social phenomena result from the motives and behavior of many autonomous, but interdependent actors. Computational approaches such as agent-based computational modeling enable theorists to do just that.

### Birds of a feather:

This is a visual representation of an agent-based model used in Marijn's paper 'Communication in Online Social Networks Fosters Cultural Isolation'. It represents computer-simulated agents connected on a regular lattice, or torus network, who exchange beliefs and iteratively form clusters of like-minded others.



### Watching patterns:

A network of 6,382 YouTube videos about COVID-19 connected by 29,783 recommendation links studied by Marijn in 'CovidTube: Mapping information segregation on YouTube'. It is a map of information about the virus one year into the pandemic and reveals what people see when they follow YouTube recommendations.

## WHAT KINDS OF DATA HELP TO ANALYZE THE INTERPLAY BETWEEN OUR SOCIAL ENVIRONMENT AND POLITICAL OPINIONS?

Sociological methodologies are remarkably diverse. In my work, I use three types of empirical data. First, I use data from (online) experiments much like psychologists or behavioral economists. In experimental settings, I can expose research subjects to a stimulus, or put them in a specific social situation like a network or collective action problem, and record their behavior. These data can then be used as behavioral building blocks in a micro-macro model. It is wonderful data because you have full control over what you measure, and a good experimental set-up can inform you about causality. However, it is harder to generalize findings outside of the lab context. You can never be sure that research subjects respond as they would 'in the wild'.

Second, I use social network data to study how individuals shape their social environment and how this environment impacts their attitudes and behavior.

Observational social network data are great for studying the interplay between selection and influence, because you do not falsely assume independence of observations, as you might when using traditional surveys. Social network data are, however, notoriously hard to collect and to model.

Finally, I also use publicly available digital trace data, like those found on social media platforms such as Twitter or YouTube. The big plus of digital trace data is that they are real, observational, behavioral data that do not estimate but describe the state of the world. But any researcher working with 'big data' must cope with data that are incomplete, noisy, biased, non-representative, drifting and/or algorithmically confounded.

## HAS YOUR DISCIPLINE BEEN HIT BY THE REPLICATION CRISIS?

Sociology has not suffered as much as other social sciences, because it has traditionally relied more on survey methods with larger numbers of respondents than in, for example, social psychology. Sociology is also a theory-rich discipline. This makes sociologists less likely to publish

idiosyncratic findings from theory-free lab studies that we have seen collapsing under the replication crisis in recent years.

## HOW CAN SOCIETY GAIN FROM THE STUDY OF ONLINE BEHAVIOR?

Research into the behavior of individuals in algorithmically driven environments has a major advantage over studying offline behavior: there is much more opportunity to intervene. Labor market sociologists may struggle to translate research insights to interventions that counter ethnic discrimination in companies' hiring processes, but researchers studying the behavior of headhunters on LinkedIn can more easily propose algorithmic tweaks to the infrastructure of the platform to foster equal opportunity. While my work is not at the point where I can design such interventions yet, I strive to understand the evolution of political opinions of social media users in order to prevent radicalization and polarization and hope this work ultimately trickles down to policymakers and engineers of social media platforms.

Perhaps surprisingly, my work has given me reasons to be optimistic about digital communications. Algorithmic technology might focus our attention on people we already agree with, but using social media diversifies our information diets and connects us to those who think differently, much more than if we restrict ourselves to the information in our offline worlds. The 'net' effect of consuming information online is positive, making us more informed citizens.

## FIND OUT MORE

For a vision of the future of computational sociology, see [Flache, Mäs & Keijzer \(2022\)](#). For Marijn's recent research on the Covid-19 infodemic, see [CovidTube: Mapping information segregation on YouTube \(2022\)](#). For an excellent discussion of the use of digital trace data, see [Salganik \(2018\)](#).





SREEMATI MITTER

FOLLOW THE MONEY

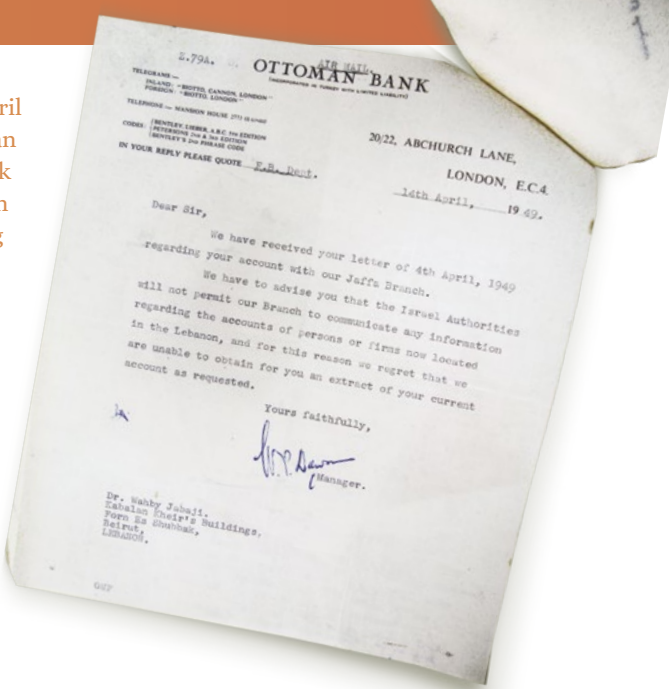
The case of the missing bank ledgers

Sreemati Mitter is an economic historian of the modern Middle East. Her work explores the financial impact of colonization on the colonized, highlighting the experiences of ordinary individuals caught up in huge, epochal events beyond their control. She uses careful detective work to piece together the elusive ‘data’ that tell their story.

HOW DOES YOUR BOOK PROJECT GIVE VOICE TO THE VICTIMS OF COLONIZATION?

Most histories of the *nakba* – the term Palestinians use to describe the violent handover of British Mandate Palestine to Israel in 1948 – have focused on lands and people. But the *nakba* also involved the confiscation and expropriation, by Israeli forces, of Palestinian bank accounts, bonds, checks, and other private financial property. My book estimates the amounts and types of assets involved, and describes the bureaucratic and diplomatic mechanisms employed by Israeli officials to legitimate these confiscations. Several international banks, as well as the British government, were complicit in this story. I recount how Palestinians fought to regain their financial property, using the law as their weapon, despite having no state to support their claims. I underline how the lack of sovereignty impacts ordinary people

Dating back to April 1949, a letter from an international bank notifies a Palestinian refugee of the freezing of their bank account by Israeli order. Sreemati found this letter in a Palestinian legal archive.



and robs them not just of their financial property, but of the means of building their lives, their futures.

HOW DOES DATA HELP YOU STUDY THE 1948 ‘NAKBA’?

Though historians prefer to use the term “sources” rather than data, for me, “data” is any evidence that can help tell the story as it really happened – to the extent that anyone can recover the past.

Reliable data ensures that such politically sensitive research is not undermined by personal subjectivities and biases. A book strewn with vague generalizations on the confiscation of Palestinian assets by Israeli officials might sell a lot of copies. But scholarly work is less sensational, and depends on well-documented and scrupulously sourced facts and figures. Data also offers perspective: without good data (how many accounts frozen; how many individuals impacted; what fraction these comprised of Palestinian GDP), it would be impossible to judge the scale of the 1948 dispossession, and thus, to properly understand its impact.

Sources are also key to establishing the theoretical value of the work. It matters, for instance, whether the financial expropriations I describe were systematic and ordered by the highest ranks of the Israeli government (as, alas, I find they were), or random acts of wartime looting. With the backing of good data, I hope to

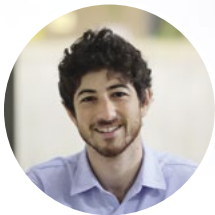
contribute to theoretical conceptions of the centrality of the state to property rights. **WHAT CHALLENGES DO YOU FACE IN COLLECTING HISTORICAL DATA?**

I work with archival sources, collected from Israeli, British, Ottoman, and private banking archives. This data is very hard to access, as the Israeli government and some banks have obscured and, in some cases, destroyed key records. Most official Israeli records from 1948 remain classified, and are inaccessible to researchers without security clearance (like me). And the key clues in the puzzle – the bank ledgers – appear to have vanished!

So I look for whatever might reveal some truth: letters from bank clerks in Palestine to bosses in London; diaries of Israeli and British officials; petitions from Palestinian bank account holders to bank managers; letters from Palestinian bond-holders to Israeli and British authorities; court records of Palestinian customers suing banks; marginal notes from lawyers to lawyers. I also reach out to elderly Palestinians (or those who know people) who lived in 1948. This oral history is exceptionally difficult, as the *nakba* generation is mostly dead or dying, but it is a key component of my work.

FIND OUT MORE

Sreemati’s publications on Palestinian financial history are available to read on the IAST website.



SAMUEL SNOW

ANGRY BIRDS

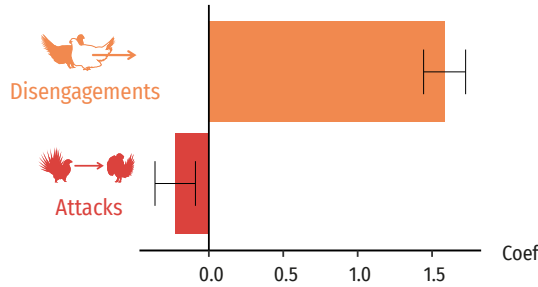
Is fighting sexy?

From intricate courtship displays to brute force, a great diversity of sexual strategies are found in nature, including humans. How do males and females influence each other’s mating choices? To study the evolution of these behaviors using social network analysis, biologist Sam Snow relies on meticulous collection of data in the wild. This rigorous, dynamic approach allows him to challenge commonly held assumptions, such as the idea that aggression helps males impress females.

My empirical work focuses primarily on the mating behavior of birds, but also fish and primates. For our network analyses, we need extremely detailed, time-ordered behavioral data that takes a tremendous amount of time and effort to collect and analyze. For example, for a couple of chilly months each year we go to the Wyoming display grounds of the Greater Sage-grouse. Hidden in tents, our teams video male-male interactions and female mating decisions and take photographs to identify individual birds by their plumage. Some of the birds are also captured and marked with leg-rings. Back in the lab, we match information from the field to the videos and painstakingly follow each bird, noting all their daily behaviors.

More sophisticated statistical and analytical tools, including computationally intensive “big data” approaches, are pushing this kind of research forward. I am involved in developing and implementing new tools for automated individual identification and tracking, as well as machine learning approaches to extract behaviors of interest and automate recording of data.

One of the key takeaways from the grouse research is that fighting isn’t sexy. It isn’t directly attractive, at least for female grouse. Traditional regression analysis can be



**Flight club:** Sam’s grouse research shows that, when females are watching, males are less likely to start fights and more likely to end them sooner.

misleading by ignoring information on the sequence and timing of events. Although male aggressive behavior and mating success are loosely correlated, our dynamic network approach reveals that females do not seem to be using information from the fights to make mating decisions. In fact, when females are watching, males are less likely to start fights and more likely to end them sooner. Fighting indirectly affects mating success by establishing territory boundaries and dominance relationships among the males that influence the likelihood that they will interfere with one another’s courtship.

Natural systems may be more complex than we assume: aggressive behavior is not always a display of prowess. For example, females may prefer to mate in social environments that are more conducive to free decisions, which could drive the evolution of more tolerant or cooperative male behavior. We need to let the animals speak for themselves and adapt our data collection and analysis to reflect the way the system works and how the animals use the information.

FIND OUT MORE

For ‘Fighting isn’t sexy in lekking Greater Sage-grouse’ and other publications by Sam, as well as fascinating wildlife stories from central China to the Ecuadorian rainforest, visit his [website](#).





LAUREN BADER

FAMILY SECRETS

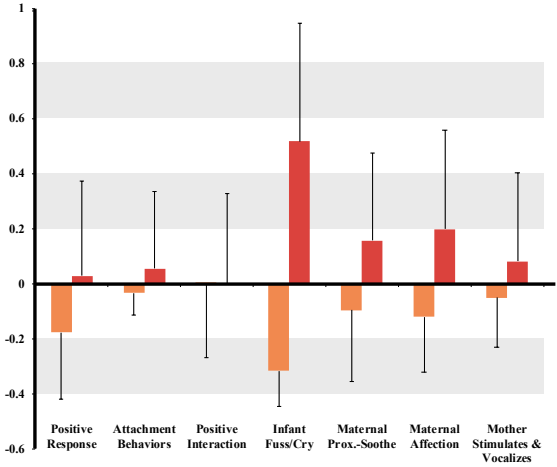
What are parents for?

Why do parents around the world differ in the way they raise their children? What role does this ‘parenting’ play in shaping infants’ social and emotional outcomes? IAST developmental psychologist Lauren Bader collects qualitative and quantitative data from families in the United States, Ethiopia, and Kenya to compare parenting beliefs and practices. Here, she explains why ethnographic methods – involving months of painstaking observation and exploratory interviews – can help to expand the narrow horizons of traditional psychological research.

FIELDWORK  
Lauren’s research draws on extensive interviews with Gamo families in southern Ethiopia

**Parental bonds:**  
In this 2019 study, Lauren found that Gamo mothers who expressed stress in response to their infants’ negative emotions interacted less with their infants (N=29). Lauren’s latest work (2021, 2022) further investigates this physiological synchrony, measuring stress-reactive cortisol levels in parents and their infants

Stressed Unstressed



We know that psychological mechanisms can vary within and between cultures. For example, some parents believe that children are born dependent and that it is the role of parents to instill independence in them. In other parts of the world, parents believe children are born independent and parents try to make them dependent on their family and community. However, less is known about the variability of psychological mechanisms, compared to their universal aspects.

Research in psychology has suffered from a lack of diversity at all levels, from scientists and journal editors to participants in studies. Most psychological research includes White participants, so descriptions of theories and phenomena are devoid of socio-cultural variation. Surveys in developmental psychology have typically been developed from theory and research on White Western babies or babies from the minority world, so methods used to collect information are often not easily adaptable to participants from the majority world.

Ethnographic methods are a set of tools to combat this ‘issue’ in research. Without such participatory and engaged research to understand the cultural values and practices of parents, the belief that socio-cultural variation is irrelevant to psychological mechanisms will persist. The “West vs. the rest” mentality is often evident in journal article titles that fail to state any identifying information about participants (admittedly, something I am guilty of too) or when I am asked why I study particular groups like the Gamo people in east Africa (i.e., “what could be different about the Gamo that requires you to study them?”). First, I would rephrase this as “working with the Gamo”. Second, how often do researchers get asked why they study MTurk people (which is a White convenience sample)?

When working with families, I begin by conducting an extensive socio-demographic interview. For example, I ask parents their race or ethnicity, birthplace, age, number of children, religion, clan, and perhaps how they plow their fields. I usually do multiple participant observations of focal

infants: for six hours spread throughout the day, I document the infant’s behavior, who interacts with the infant, and how. Next, I conduct parenting interviews, asking parents open-ended questions about raising their children. For example, “Can you tell me about your child because I do not know them very well?” In response, I usually get behavioral descriptions. Parents have told me their infant cries too much and this impacts the amount of work they can get done because they spend time responding to their upset infant. In White Western developmental psychology, a question like this would usually be asked in a questionnaire in which parents can rate the infant’s temperament; for example, how often their baby shows distress. This typical Likert-type survey would not give me an accurate and complete description of how parents perceive their infant’s behavior. With a more descriptive question, I am also able to compare parents’ responses to other ethnographic information that I have collected.

“Most psychological research includes White participants, so methods used to collect information are often not easily adaptable to participants from the majority world”

Using this qualitative ethnographic approach, I recently found that Gamo mothers share similar concerns about their health and their baby’s health during pregnancy and postpartum compared to other mothers living in similar environments. Gamo mothers are particularly concerned about pregnancy complications and sickness and disease following birth because of their lack of proximity to a hospital.

In about two months of fieldwork, I can usually collect data from 40 families. I also spend time meeting with local community members and working with local research assistants to guide me in asking appropriate and culturally relevant questions. This type of research takes a long time and is often exploratory and descriptive, which is difficult to publish in psychology, a field that prioritizes experiments and causal inferences. Without this exploratory and descriptive work, we cannot accurately understand Gamo parenting.

FIND OUT MORE

For Lauren’s research on east and central African families, see her IAST web page. For further reading about White Western bias in psychology, see Roberts (2022) and Syed (2017).

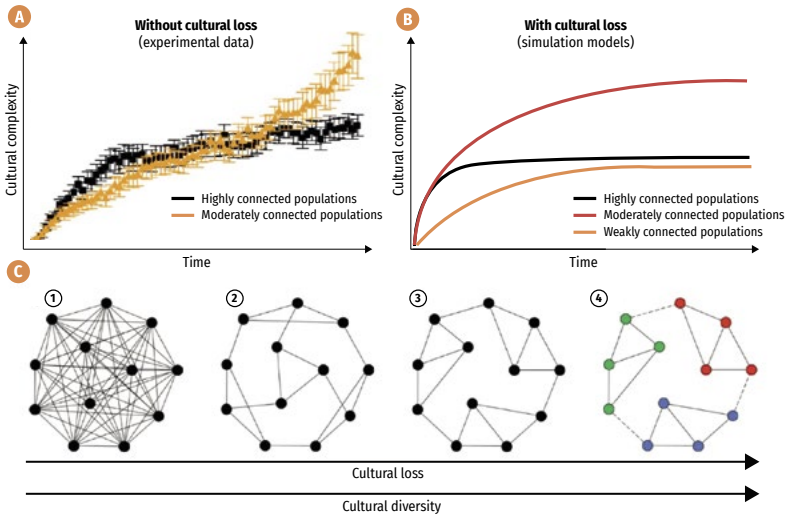




MAXIME DEREX

COLLECTIVE LEARNING

# How do complex cultures evolve?



**Figure 2:** **A** Maxime’s experimental results show that moderately connected populations are slower at accumulating innovations but eventually reach higher levels of cultural complexity than highly connected populations when innovation depends on cultural diversity. **B** Simulation models show that optimal rates of accumulation are reached for intermediate levels of connectedness when populations are exposed to cultural loss. **C** Patterns of connectedness affect both cultural loss and diversity.

Most technologies, scientific theories and institutions are complex cultural traits that no individual could invent on their own, emerging instead through gradual accumulation of many, typically small, improvements. Drawing on multiple disciplines including evolutionary anthropology and psychology, Maxime Derex uses rigorously designed experiments to improve our understanding of the process by which individuals learn from, and build upon, the achievements of others.

**WHAT IS THE PUZZLE YOU SEEK TO SOLVE?**

The ability to learn from others – known as social learning – is essential to cultural evolution, as it allows the transmission of innovations between individuals and across generations. Yet, the ability to learn socially is widespread in animals, while the accumulation of cultural innovations is not. Moreover, while there is a general trend toward richer and more complex cultures in humans, there have been periods of both sudden cultural accumulation and cultural loss. These observations suggest that cultural accumulation occurs only when very specific conditions are met.

**HOW CAN A DATA-DRIVEN APPROACH HELP TO IDENTIFY THESE CONDITIONS?**

Cumulative cultural change can be seen as a Darwinian evolutionary process, with beneficial cultural (rather than genetic) modifications selectively preserved over successive generations. Theoreticists have drawn inspiration from population genetics to develop theoretical models of cultural evolution and generate many theoretical predictions about how cultural accumulation occurs. Yet many of the models’ assumptions and predictions were left untested.

Using real-world ethnographic and archaeological data to test theoretical models has yielded mixed results. Cultural transmission is much messier than genetic transmission, which makes studying cultural evolution in natural populations extremely difficult. To get around these limitations, my research relies mainly on the use of laboratory and online experiments.

Cumulative culture requires the production of innovations and their propagation within social groups. Thus, experiments in which groups of participants are asked to improve a technology, rigorously designed to track the appearance and transmission of innovations, can shed light on the underlying mechanisms that affect cultural accumulation. The main challenge consists in designing tasks that appropriately capture the main features of actual technologies (Figure 1), while making sure that collective improvements can realistically be expected during the relatively short duration of an experiment. Computerized tasks are convenient because they permit more efficient data collection; but physical tasks feature realistic physical principles and phenomena that strongly tap individuals’ intuitions, which can be important when studying the role of cognitive processes.

This approach allows multiple replications, the recording of all aspects of social learning events, and the generation of complete, uninterrupted, and unbiased datasets. Despite several limitations, this approach has proven a powerful way of testing predictions and has helped to improve the theory of cultural evolution.

**WHAT DO YOUR EXPERIMENTS REVEAL ABOUT THE ROLE OF POPULATION SIZE?**

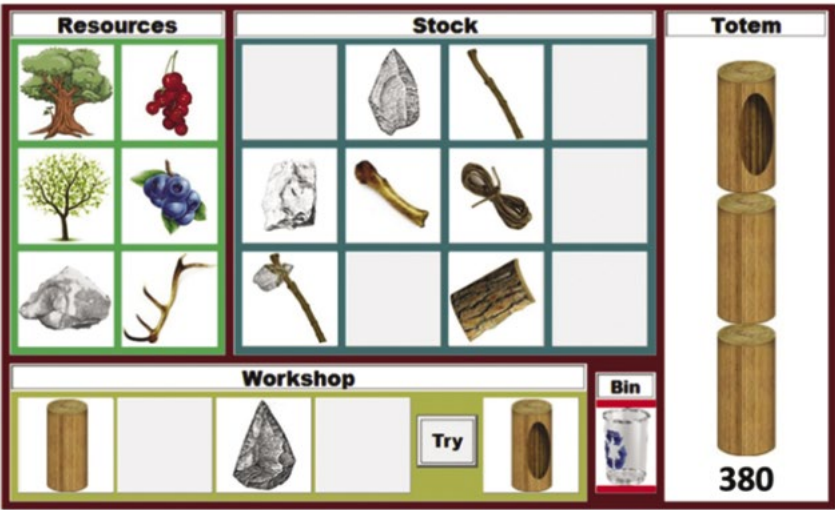
This is a hotly debated topic. Many theoretical models have shown that a population’s ability to develop complex cultural traits is positively affected by the size of the population that shares information. As a result, it has become commonplace to interpret major cultural transitions in terms of variation in population size. For example, bursts of cultural complexity during the Upper Palaeolithic transition (45,000 years ago) are claimed to result from population increases, while the loss of cultural traits have been attributed to population decline.

Results from my experiments confirm that when group size increases: 1) cultural knowledge deteriorates less; 2) improvements to cultural traits are more frequent; and 3) cultural trait diversity is

more often maintained. However, some of my results were at odds with theoretical predictions. For instance, models were predicting that cultural evolution should be enhanced when social information spread quickly within and between populations. My results show that our propensity to learn from successful cultural models causes fully connected groups to converge rapidly on a unique solution. As a result, fully connected groups tend to lack the cultural diversity required for innovating over the long run (Figure 2). In comparison, the diversity of solutions produced by partially connected groups allows them to develop complex solutions that are never produced in fully connected groups.

These results indicate that population size alone is not sufficient to predict cultural complexity and might help explain discrepancies between measures of population size and observed cultural complexity. For example, it suggests that populations made of semi-isolated groups might exhibit higher cultural complexity than non-fragmented populations of the same size. Overall, my experiments suggest that population structure can have important effects on cultural accumulation.

**Figure 1:** This task simulates the real-world innovation process in which production of complex artefacts (that is, virtual ‘totem poles’) depends on discovery of high-level innovations (for example, axes), which is contingent on discovery of lower-level innovations (for example, stone tools). Maxime’s subjects are provided with six basic resources that can be combined/refined using a workshop panel. Participants can produce 27 unique tools, 142 innovations and 266,915 unique totems.



FIND OUT MORE

Maxime’s [publications](#) on cultural evolution are available to read on the IAST website.



PLACE  
DES  
REINES ET ROIS  
WISIGOTHS

## Visigothic relics found under IAST

**Treasure trove:**  
Building remains  
from the 5<sup>th</sup> century  
discovered in 2011

**N**ew bricks on ancient stones. Toulouse is home to many archeological remains that bear witness to its vibrant past. Recently, scientists have discovered an archeological treasure trove right beneath the offices of IAST researchers. It turns out their building's 300,000 bricks, matching the pink color of the city, rest on centuries-old edifices. Today, the buzz of cutting-edge research fills corridors and lecture halls above the ruins of the Visigothic kingdom.

In 2011, when construction was approved for the TSE-IAST building, the National Institute for Archaeological Research (Inrap) began excavations on a site of 2,900 square meters. "They expected to find remains in this area because previous research had already unveiled buildings and city walls from the Late Roman era," explains Emmanuelle Boube, archaeologist at University Jean-Jaurès. "The Saint-Pierre des Cuisines church and other monumental buildings that had been found suggested that power was located in this neighborhood, dating back to the end of Antiquity (5<sup>th</sup> century)."

But whose power? In 5<sup>th</sup> century Tolosa, this authority could only be that of the Gothic kings. Originally from the shores of

the Baltic Sea (Scandinavia and northern Poland), the Goths established themselves in today's Ukraine and Romania during the 3<sup>rd</sup> century. Driven out by the Huns, the Visigoths entered the Roman empire. After several twists of fate and the sacking of Rome, they went to Gaul, then Spain, where they put themselves at the service of Rome. In 418, Roman emperor Honorius installed them in this part of Aquitania. Toulouse then became their royal residence and eventually the capital of a completely independent kingdom at the end of the 5<sup>th</sup> century.

The remains under IAST were built to impress, says Emmanuelle. "The walls that were found are part of a vast building that could have been 50 meters long and 40 meters wide. The research done in 2011, under the direction of Jean Catalo, and excavations north from Saint-Pierre-des-Cuisines in 1995 allowed us to envision a large rectangular surrounding wall with an extraordinary ornamentation and an impressive colonnade." Based on this exploration, archeologists believe these walls may be the remains of a prestigious mausoleum that has not been found yet. "Only the map of this great gallery has, so far, been unveiled, but other areas are

still to be examined, like the poplars alley behind TSE where the central part of the mausoleum may be."

**"The walls are part of a vast building that could have been 50m long and 40m wide. Excavations in 2011 allowed us to envision a large rectangular surrounding wall with extraordinary ornamentation and an impressive colonnade"**

This area was used for funerary activities during the High Roman Empire. These celebrations were held outside city walls, according to Roman law. "This neighborhood is the perfect location," says Emmanuelle, "because it is close to the river Garonne and its ford. More importantly close to what we think was the palace." These necropolises were right next to craftsmanship areas, teeming with various activities. "According to the chronology, the use of similar building techniques and the overall coherence of the neighborhood map, these remains appear to have been part of the same power structure".

Following the Visigothic period, these walls and construction became part of the medieval town of Saint-Sernin, and were used as fortifications.

The Visigothic Association of Toulouse has campaigned to make this past visible in the city. The small square next to IAST, inaugurated on October 5, 2022, by the Mayor of Toulouse, has been named "Place des Reines et des rois Wisigoths", to remind Toulouse's inhabitants of the ancient queens and kings in its heritage.

**Burial of a new-born in an amphora dated from the 3<sup>rd</sup>-4<sup>th</sup> century.**



### FIND OUT MORE

J. Catalo, Q. Cazes, D. Paya et al. "Le monument d'époque wisigothique du site de l'École d'Économie à Toulouse : première interprétation" in E. Boube et al. "Du Royaume Goth" Toulouse 2013, Bordeaux 2019.



TOULOUSE

SOCIAL SCIENCES

RESEARCH

TEAMWORK

INTERDISCIPLINARY

COLLABORATIONS



**JOIN OUR RESEARCH  
CENTER** IN THE HEART  
OF TOULOUSE,  
SOUTHWEST FRANCE

We're offering Research and Visiting Fellowships in a large range of disciplines in the social, behavioral and life sciences: anthropology, evolutionary biology, economics, genetics, history, law, mathematics, neuroscience, philosophy, political science, psychology and sociology.

Learn more on how to apply at [iast.fr/apply](https://www.iast.fr/apply)



[www.iast.fr](https://www.iast.fr)