IAST
MAGAZINE

INSTITUTE
FOR ADVANCED
STUDY IN
TOULOUSE

WINTER 2019 #15

FRESH START
NEWCOMERS, NEW BUILDING & NEW MAGAZINE

THE EXERCISE PARADOX
WHY IS IT SO HARD TO GET FIT?

ORIGINS OF BEAUTY
THE EVOLUTION OF SEXUAL ATTRACTION

IAST

In this ISSUE

Biannual magazine of the Institute for Advanced Study in Toulouse

Commissioning editor
Paul Seabright

Editor-in-chief
Jennifer Stephenson

Production manager
Carolyne Lamy

Editorial contributions
James Nash

Iconography
©Studio Tchiz, ©Carolyne Lamy, ©Shutterstock, ©Studio Tchiz, ©Richard McElreath ©Jim Harrison, ©Sylvie Borau, ©University of Texas School of Law, ©Unsplash, ©Vivek Venkataraman, ©Jonathan Stieglitz, ©Heidi Colleran, ©Charlotte Cavaillé

ISSN number
2554–2141

Graphic design, layout
Agence Blackpaper
www.blackpaper.fr

2000 magazines printed on 100% recycled paper from sustainable resources by Reprint

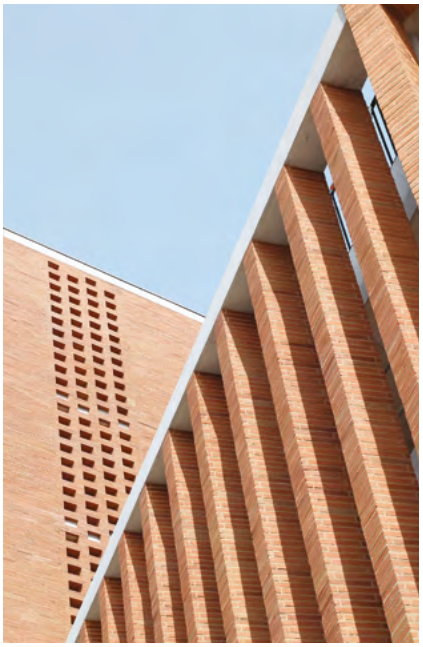
ISO 14001 - Imprim'Vert
31 Rue André Vasseur,
31200 Toulouse
groupereprint.com

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



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.

IAST MAG #15 CONTENTS

‘IAST diversity in the human sciences is unparalleled’

RICHARD McELREATH

Director of the Department of Human Behavior, Ecology and Culture

Max Planck Institute for Evolutionary Anthropology

Scientific disciplines are arbitrary compositions. There is no scientific logic to the bundles of topics in the individual fields of anthropology, biology, economics, sociology, or psychology. These bundles are historical accidents. Bundled scholars are often redundant in their own field and alienated from those in neighboring fields.

IAST serves as a model for scientists who struggle against the bundles. The Institute supports non-disciplinary research that is both basic and problem-oriented. There is no other research institute bringing together such a diversity of scholars to work on common problems in the human sciences. From my perspective as an interdisciplinary scientist and as a collaborator, IAST is an important hub through which boundary-defying scholars and sympathetic institutions find one another.

This issue of the revamped ‘IAST Magazine’ exemplifies the benefits of interdisciplinary work, examining the web of interactions between the human body and human behavior: the impact of evolution on aesthetics **(Jeanne Bovet)**; the construction of consumer markets and consumer bodies **(Sylvie Borau)**; the very good reason that exercise is hard **(Daniel Lieberman)**; the benefits of being short **(Vivek Venkataraman)**; and the imprint of behavior in our bones **(Jonathan Stieglitz)**.

These contributions emphasize how hard it is to get the science right about human biology and human behavior without considering both. It is also highly unusual to see a collection of research examining related processes over vastly different timescales. This kind of composition is possible at few places other than IAST.

2019
Past Events

March
14-15

POLITICAL SCIENCE

INFORMATION, INSTITUTIONS AND ACCOUNTABILITY

Are citizens willing to vote against their own party? Do leaders have an impact in weaker institutions? Leading international scholars met to discuss these and other matters at the sixth IAST/TSE Political Science and Political Economy Conference.

April
23-26

BIOLOGY, SOCIAL SCIENCE

IAST HOSTS EUROPEAN HUMAN BEHAVIOUR AND EVOLUTION ASSOCIATION CONFERENCE

EHBEA is an interdisciplinary society for European researchers with an interest in evolutionary approaches to human cognition, biology, behavior and social institutions. It supports different approaches to a wide range of theoretical and applied topics, such as subsistence, kinship, medicine, conservation, and prosociality.
The 14th annual conference was co-organized in Toulouse by IAST, CNRS and UT1, allowing 245 researchers to meet leading scholars, exchange ideas and develop networks.

May
9-10

ECONOMICS, HISTORY

RISK, DISASTER AND CRISIS

Historians, economists and other speakers at this IAST event presented and discussed their research on environmental crises and famines, the causes of financial crises and risk management.

May
23-24

ECONOMICS, BIOLOGY

CULTURAL EVOLUTION

The seventh annual Economics and Biology workshop welcomed scientists to discuss their latest findings on the ways cultural evolution can transform societies.

June
28

WORKSHOP

ACROSS FRONTIERS

Each year, the annual IAST workshop brings together present and former members of the Institute to follow up on their research, careers and lives, and to strengthen bonds within the IAST community.

Dec.
01

OUTREACH

SCIENTISTS AT THE MUSEUM

Hundreds of people came to meet our researchers as CNRS celebrated its 80th anniversary at the natural history museum in Toulouse. Victor Gay joined families for coffee and spoke about women's work and the cultural transformation of World War One, while Sylvie Borau presented her latest research on gendered marketing.

HIGHLIGHTS

APPOINTMENTS & PRIZES

IN BOOKSTORES

Multidisciplinary prize winners

The IAST prize aims to facilitate cross-disciplinary fertilization and is awarded annually to outstanding multidisciplinary research projects. This year, the prize was awarded to Bence Bago and Leah Rosenzweig for a project entitled "Cognitive and Emotional Processes Behind Susceptibility to Political Misinformation in the US and Nigeria". A special mention was made of Slimane Dridi, Alberto Micheletti, and Saurabh Pant for a project entitled "Biological and Psychological Origins of the Varieties of Nationalism: A Dynamic Theory and Lab Experiments".
The "BLOOD-COOP project: a genome-wide study of the altruistic motivation of blood donors" advanced by Harilanto Razafindrazaka (IAST), Astrid Hopfensitz (IAST), Denis Pierron (AMIS: Laboratoire d'Anthropologie et Imagerie de Synthèse) and Arnaud Tognetti (Division of Psychology, Karolinska Institute, Stockholm) won the 2018 prize.

IAST researcher wins newspaper award

Emmanuelle Auriol received a special prize from French newspaper La Tribune for her report for the French Prime Minister, in support of the legalization of recreational cannabis in France. She argues that this would improve young people's health, revive troubled neighborhoods and generate additional tax revenues for the government estimated at €2 billion.

War and Chance

Congratulations to Jeffrey A. Friedman for his latest book, submitted and revised while he was working at IAST (2017-18), and now published by Oxford University Press.

Funeral rites

Anthropobiologist Éric Crubézy takes us on a journey of discovery of funeral rites around the world from Siberia to Cameroon, via Pharaonic Egypt or southern Europe. Published by Odile Jacob editions.

Does artificial intelligence have morality?

A year after the 'Moral Machine' article in Nature and an appointment to lead the European Commission's expert group on the ethical issues raised by driverless vehicles, cognitive psychologist Jean-François Bonnefon has published a book in French on the morality of driverless cars. «La voiture qui en savait trop» (The car that knew too much) at HumenSciences.

Upcoming Events in 2020

January 29-31	Pyrenean Interdisciplinary Research Event (PIREN)	June 2-3	Islam and Immigrant Politics
May 4-5	7th IAST-TSE Conference in Political Science and Political Economy	June 4-5	8th Toulouse Economics and Biology Workshop
May 28-29	Big Data in Economic History	July 2-3	Multidiscplinary conference Misinformation in the Digital Age

Newcomers

Ten new scientists joined our research team this fall. We look forward to their contributions to science and to our community.

Lauren BADER

University of Michigan

Psychology

Lauren examines the cultural and neurobiological underpinnings of parenting and social-emotional development and has lately investigated the role of maternal sensitivity and infant attachment in bio-behavioral attunement between infants and their mothers.

> "The diverse community provides the perfect environment to discuss research ideas and questions"

Jane CONWAY

King's College London

Psychology

Jane is an experimental psychologist. Her work concerns the socio-cognitive ability to represent others' minds and their mental states. She is particularly interested in studying individual differences in this ability.

Margot DAZEY

European University Institute

Sociology

Margot is a sociologist interested in the nexus of religion and politics. Her research investigates questions of group consciousness, class cleavages, faith-based activism and citizen engagement of minority groups.

> "IAST promises thought-provoking methodological cross-fertilization and stimulating exchanges"

Elizabeth DEKEYSER

MIT

Political Science

Elizabeth's research uses ethnographic and computational methods to examine how politics influence identity, with a particular focus on questions surrounding Islam and immigration.

Maxime DEREX

University of Exeter

Psychology

Maxime is a CNRS researcher studying the mechanisms underpinning human cumulative culture. He is particularly interested in the psychological mechanisms involved and how these interact with population structure to impact the cultural accumulation process.

Gonçalo FARIA

University of St. Andrews

Biology

Gonçalo's research examines evolution and animal behavior (including that of humans). He looks at how and why behaviors evolve, using mathematical analyses and computer simulations with a conceptual framework that can be used for empirical studies.

> "I'm excited to be part of this vibrant community. I know these next years at IAST will be inspiring"

Zachary GARFIELD

Washington State University

Anthropology

Zachary's work focuses on political leadership and understanding strategies of leadership and followership in small-scale societies. He uses comparative methods and behavioral-observational research to evaluate established theoretical models with systematic data from small-scale societies.

Imil NURUTDINOV

UCLA

Political Science

Imil's research seeks to illuminate the causes of differential economic growth among European societies from 1200 to 1900. Imil constructs original historical databases and analyzes them using panel-data methods and structural models.

> "The openness of the IAST-TSE community is a great foundation for interdisciplinary research"

Catherine MOLHO

Vrije Universiteit Amsterdam

Psychology

Catherine is a psychologist studying human cooperation, morality, and the role of emotions in decision-making. She draws upon insights from social and evolutionary psychology, behavioral economics, and evolutionary biology to better understand the factors underlying cooperative and punitive decisions.

Jan STUCKATZ

London School of Economics

Political Science

Jan's research covers the political economy of trade and corporate influence in politics, with a special emphasis on firm-level analysis. Jan combines corporate political activity and trade-policy big data with data-science tools and machine-learning techniques.

New beginnings

IAST has just moved along with the Toulouse School of Economics (TSE) to a brand-new building on the Toulouse University campus. Located in the historic center of Toulouse, our forward-thinking masterpiece designed by Grafton Architects has inspired new and renewed projects, such as the magazine makeover which we are proud to present here via this issue.

The new TSE-IAST construction is inspired by the typical red-brick architecture of Toulouse, often referred to as the "Pink City". The six-story building offers panoramic views over the Brienne Canal, the Garonne river and the Saint-Pierre churches. Features include an impressive sky cloister, an enhanced medieval rampart, 11,280sqm of office space for 350 faculty members, staff and PhDs, three state-of-the-art conference auditoriums and six seminar rooms. Both traditional and modern, the edifice is designed to high energy-efficiency standards, including for instance an innovative air-cooling system using water from the Brienne canal.

> "This fall, we unveil both a new building and a new magazine layout"

This new "home" is the opportunity for our combined TSE-IAST community, working together in economics and other social sciences, to further our ambition of understanding the key economic and social issues of today and tomorrow.

The building will help us to foster pioneering scientific exchanges, organize cross-frontier academic events, and also invite the general public to delve into the world of science. We hope you will soon come to visit our new exciting hub, and in the meantime, you can continue to follow our latest news, scientific findings and in-depth articles in our revamped 'IAST Magazine'.

Let's get physical

The theory of evolution by natural selection is arguably the most comprehensive and coherent theory in the social sciences.

This theory is often used to explain variation in behavior, preferences and motivation across diverse contexts, but it can also explain variation in morphology and physiology. In this section, IAST researchers and visitors utilize evolutionary reasoning to explore wide-ranging, meaningful questions about the human body.

Is physical attractiveness objective? What makes human bodies unique compared to other animals? In modifying our own environments, how have humans changed the ways in which evolutionary forces operate on our bodies? Read on to discover answers to these and other similar questions.

JEANNE BOVET

THE SCIENCE OF SEXUAL ATTRACTION

On the origin of beauty

Why do we care about looking good? Attractive people are more likely to get jobs, receive higher salaries and more lenient sentencing. But what drives our obsession with beauty, and with idealized women's bodies in particular? Former IAST biologist Jeanne Bovet adopts an evolutionary approach to understanding such behavior. Working with co-authors from economics, psychology, marketing and anthropology, her methods combine eye-tracking technology and analysis of ancient artworks to determine which female features are considered attractive and why.

WHAT DOES EVOLUTION HAVE TO DO WITH BEAUTY?

Individuals are often faced with a choice between a variety of potential partners with different mate values, defined (from an evolutionary point of view) as the degree to which an individual would promote the reproductive success of another individual by mating with him or her. Preferences for certain physical features can help increase the quantity or quality of descendants. This phenomenon – mate choice – is a major mechanism through which sexual selection influences evolution.

WHY DO WOMEN'S BODIES SPARK MORE INTEREST THAN THOSE OF MEN?

Women's physical ability to have children varies more than it varies for men, requiring a larger investment. As this fertility is largely determined by a woman's physical and physiological condition, men value physical cues in prospective mates more than women. Women appear to be sensitive to this preference and frequently try to amplify these cues, as indicated by the highly lucrative cosmetics and beauty industries.

> "Many preferences for physical features appear to be the result of evolution and occur because these traits provide reliable cues about potential mates. However, some preferences vary between geographical regions and across time"

WHAT PHYSICAL CUES WERE ANCESTRAL MEN LIKELY TO FIND APPEALING?

Not only is it dangerous to copulate with someone with a contagious disease, but older and unhealthy women cannot have as many children as young, healthy women. Pregnancy and breastfeeding are energetically demanding and usually require being in good health. As a consequence, ancestral men who were able to detect and prefer young and healthy women had more descendants, who inherited these preferences. Research shows, for example, that attractive faces are considered healthier and that men prefer partners younger than themselves. In fact, however old men are, they are sexually attracted to women with an age close to their fertility peak.

Pregnant and lactating women are momentarily infertile, and each pregnancy decreases future reproductive potential. Thus, cues associated with reproductive status and parity (i.e., the number of previous pregnancies) are expected to be correlated with female sexual attractiveness.

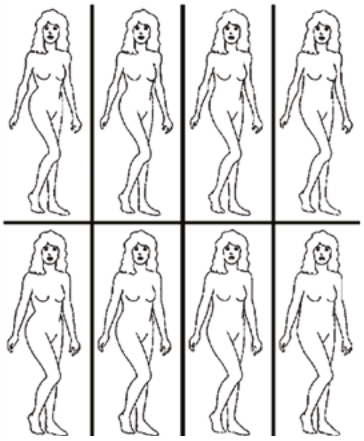
FROM AN EVOLUTIONARY PERSPECTIVE, WHAT ELSE IS FEMININE BEAUTY MADE OF?

Studies have shown that facial features that indicate youth are more attractive to men, and the decline of facial attractiveness with age is stronger for women than for men. During puberty, androgens stimulate growth of the jaw, cheekbones, and brow ridges in boys; estrogens inhibit the development of these features among girls, and may also increase lip size. This facial femininity increases women's attractiveness.

Body shape also contains cues of age, health, reproductive status, and parity. Having a very low or high body mass index (BMI) can impact fertility.

If a woman is too thin, she will stop ovulating or have insufficient resources for pregnancy or lactation. On the other hand, overweight and obesity are linked to disorders of the ovarian cycle and miscarriage. Feminine hormones like estrogens direct fat storage to the hips, while masculine hormones stimulate fat deposits in the abdominal region.

This fat distribution can be measured with the waist-to-hip ratio (WHR). WHR seems to be a cue of age, reproductive status and parity. Many studies show that men find women with a low WHR more attractive [see panel].



In a 2015 study that showed beauty preferences can change over time, Jeanne presented online participants with Western artworks, such as the 'The Birth of Venus' (above left), from as far back as 500 BCE. Participants were asked to select one of the 12 figures (above right) that most resembled the woman depicted in the artwork. This allowed Jeanne to assign a mean estimated waist-hip ratio (WHR) to each artwork. Combining this with data on Playboy models and beauty pageant winners, her paper suggests that the WHR considered as ideal has decreased since about 1400.

Women are the only mammal with permanent breasts, and these are large compared to other female primates. Breast shape is linked to a woman's age, current condition, and parity: high, firm breasts are associated with nubility, engorged breasts indicate lactation, "sagginess" increases with age and parity.

There are many other physical features – such as hair, or leg length – known to have an effect on female attractiveness. And in almost every culture, beauty can be enhanced using dress, jewelry, tattoos, makeup or other techniques. When choosing a mate, men also use non-physical features, such as voice, smell, movements, and behavior, which can be linked to physical or physiological conditions, as well as personality, psychology, and social background. Such features, whether physical or not, are not all equally weighted in mating decisions, but they all likely contribute to the general evaluation of a potential partner.

HOW DOES THE MEDIA INFLUENCE CONTEMPORARY BEAUTY IDEALS?

When people see faces or bodies with a certain trait, they tend to prefer new faces or bodies that share this characteristic. For example, exposure to thin bodies makes people prefer thinner bodies. Individuals presented in the media do not correspond to the average population: among other things, they are generally more attractive. In one study, men previously exposed to women pictured in Playboy magazine judged "ordinary" young women as less attractive. Studies show that access to television or the internet also has an effect on preferences. For instance, in El Salvador, people without internet access prefer more feminine men's faces, and more masculine women's faces.

IS BEAUTY UNIVERSAL OR 'IN THE EYE OF THE BEHOLDER'?

A complete understanding of beauty must combine both objective and subjective accounts. Many preferences for physical features appear to be the result of evolution and occur because these traits provide reliable cues about potential mates. However, these preferences are also plastic, varying between geographical regions and across time.

This variation may be beneficial, enabling individuals to adapt to different conditions. For example, as fat represents caloric storage, a high BMI can be advantageous in environments where food supply is scarce and/or unpredictable. Populations where a preference for a high BMI has been observed have low and unreliable access to resources and a comparatively high prevalence of infectious diseases. A group's socioeconomic status has also been shown to be a stronger determinant of body weight ideals than ethnicity.

READ MY HIPS

Men's preference for women's waist-to-hip ratio (WHR) is often used to show that evolution shaped human ideals about beauty. But here and elsewhere in her field, Jeanne believes the literature is guilty of 'just-so storytelling' – failing to establish clear definitions and verifiable mechanisms – which has contributed to a wider mistrust of evolutionary explanations for human behavior.

To address this, Jeanne has conducted the first comprehensive review of existing evolutionary hypotheses about men's WHR preferences. Her in-depth theoretical analysis finds that WHR is a powerful measure, but perhaps not as "magical" as often assumed. The most cited hypotheses (for example, that WHR is a cue of health or fecundity) are not necessarily the ones with the strongest theoretical support, while some promising hypotheses have seemingly been overlooked. "Not all the features correlated with WHR are linked to mate value. Most of the mate value-related information provided by WHR is relatively basic (sex, age, number of children, current pregnancy). Nevertheless, WHR is a useful and practical visual trait aggregating the information that a potential mate might not even know is associated with an increase in his own reproductive success."

Jeanne hopes that her emphasis on theoretical precision will have a domino effect, leading to better predictions and experimental design, and bolstering the credibility of future studies. "Since the replication crisis, much effort has been made to improve our methodological practices, which is extremely encouraging. I hope that this aspiration toward more rigor will also be reflected in how we approach the theoretical foundations of our research."

FIND OUT MORE

Read Jeanne's 2019 review 'Evolutionary Theories and Men's Preferences for Women's Waist-to-Hip Ratio: Which Hypotheses Remain?' and her other publications on human mate choice and sexual selection:

> **See www.jeannebovet.com**

SYLVIE BORAU
CONSUMER BODIES

Shopping for sex appeal

From curvy pink razors for women to DIY power tools for men, consumers are increasingly targeted with male or female versions of essentially the same product. Sylvie Borau teaches ethical marketing at Toulouse Business School, applying insights from evolutionary psychology to explain consumer behavior. She teamed up with IAST psychologist Jean-François Bonnefon to find out whether our shopping makes us sexier.

Gendered marketing campaigns – such as Bic's pens 'for her', with pastel-tinted, thinner barrels 'to fit a woman's hand'; or PepsiCo's 'Lady Doritos' for women 'who don't like to crunch too loudly' – are both controversial and pervasive. Until now, most research on the phenomenon has focused on the mechanisms by which it spreads, such as social pressures or marketing influence, rather than understanding its root causes.

Starting with the simple idea that humans use consumer products to manipulate the impression they make on others, Sylvie and Jean-François suggest that gendered products can become a cultural feature of the owner's extended phenotype that signals exaggerated masculinity or femininity to increase the physical attractiveness of their owners.

The concept of an extended phenotype was introduced by Richard Dawkins in 1982 to explain how organisms manipulate their environment to increase reproductive success. Spider's webs, bowerbird nests or beaver dams illustrate how an organism's biological traits can be extended to include features of the external world.

More specifically, gendered products would act as flashy signals of exaggerated sexual-typicality, a form of cultural extended supernormal stimulus. Nikolaas Tinbergen (1953) discovered that a natural stimulus can be artificially exaggerated and produce a supernormal stimulus to trigger a supernormal response. For example, oystercatchers prefer large artificial eggs to their own normal-size eggs. Sylvie and Jean-François' novel suggestion is that gendered products also act as supernormal stimuli, exaggerating sexually dimorphic human body features that act as sexually attractive cues.

"Gendered products can be completely arbitrary but their design can also be inspired by human sexual dimorphism," Sylvie observes. "For example, products with bulky proportions, angular shapes, dark colors, rough texture or heavy weight seem to reflect male sexual dimorphism. While smaller, rounder shapes, curvier lines, lighter colors, smoother textures and softer surfaces seem to reflect female sexual dimorphism."

In three experiments, the Toulouse researchers found converging evidence for their prediction. In the first study, participants were asked to look at a masculine or a feminine car. They were asked to imagine they had stopped at a traffic light and could not clearly see the male (for female respondents) or female (for male respondents) owner/driver of the car behind its tinted glasses. Participants then rated the driver's femininity/masculinity, body appeal, sex appeal, and partner appeal.

The following studies used pictures of identical twins: sisters for male participants, brothers for female participants. Each twin was described as having a favorite set of gender-typical or gender-atypical or gender-neutral products (such as earplugs, toothpastes, or coffee mugs), shown with their picture. Participants were asked to click on the twin they would rather date, and to rate how attractive they imagined each twin's body to be.

In the results from first study, the imaginary owners of a gender-typical car were pictured as having a nicer body, more sex appeal, and higher mating success. This study also showed the role of increased femininity or masculinity in the desirability of owners of a gender-typical car.

In the subsequent studies, both men and women who owned gender-typical everyday products were pictured as having a nicer body. Overall, the results suggest that gender-typical products improve their owners' attractiveness.

"Our findings are connected to research on consumer products that allow direct manipulation of secondary sexual characteristics; such as cosmetics, high heels or clothes that exaggerate feminine facial features, gait, or the hourglass figure. The novelty of our findings, though, is that the gendered products we studied can increase physical attractiveness and desirability without any impact on physical characteristics."

"Both men and women who owned gender-typical everyday products were pictured as having a nicer body. Overall, the results suggest that gender-typical products improve their owners' attractiveness"

FIND OUT MORE

As well as her 2019 research described above, Sylvie has published various papers on women in advertising and is now focusing on gendered AI.

> **See www.iast.fr/people/sylvie-borau**

DANIEL LIEBERMAN

THE EXERCISE PARADOX

Why is it so hard to get fit?

What can the evolution of physical activity tell us about our unhealthy habits? Harvard paleoanthropologist Daniel Lieberman integrates experimental biomechanics and physiology to study how and why the human body works the way it does. At the European Human Behaviour and Evolution Association conference in Toulouse, the 'Barefoot Professor' discussed the links between today's couch potatoes and the 'survival of the fitter'.

WHAT DO YOU MEAN WHEN YOU REFER TO 'THE EXERCISE PARADOX'?

Most of the things that are good for our reproductive success – such as sex, sleeping, eating – are also pleasurable. But even though everybody knows that exercise is healthy, most people prefer not to exercise. Around the planet we have a physical inactivity epidemic: by some estimates, only 20 per cent of Americans get 150 minutes of exercise per week, and half of Americans claim they get no exercise at all.

HOW MUCH PHYSICAL ACTIVITY DID WE EVOLVE TO DO?

Exercise is constantly sold to us a magic bullet that can only be good but, like everything, there are tradeoffs. For example, exercise increases the risk of injury. Exercise is also an energetic tradeoff and we are an energetically profligate species.

This was a major selective force. There are several things you can spend energy on: growth, maintenance, storage, physical activity and reproduction. Energy was probably limited most of the time during human evolution, exaggerating these tradeoffs.

> "Hunter-gatherers spend 30-40% more energy per day than chimpanzees on physical activity. Moderate and vigorous exercise takes up at least two hours a day, compared to 21 minutes for contemporary Westerners"

These energy allocation tradeoffs also occur in a phylogenetic context. Humans are unusually active wcompared to other apes. Chimpanzees walk an average 2.5km a day. Gorillas basically live in a salad bowl and hardly go anywhere. But average male hunter-gatherer humans walk about 15km a day.

As well as walking, we're adapted for a variety of important physical activities, like carrying or digging. In tropical environments, foragers will dig between 2-7 hours a day, and digging requires about 3.5 times as much energy as sitting or resting. That can translate into 260-400 calories a day. Sedentary Westerners are about as sedentary as chimpanzees, but relative to body mass or metabolic rate, foragers like the Hadza spend about 260 more calories per day on being active than chimpanzees do. That is the same amount of extra energy required by a human-size brain vs a chimp-size brain.

Hadza females spend less energy on activity, but divert more energy to reproduction. Hadza also probably spend a lot more energy digesting their food than we do because it's a lot less processed. All in all, hunter-gatherers, especially males, spend 30-40% more energy per day than chimpanzees on physical activity.

Moderate and vigorous exercise takes at least two hours a day, compared to 21 minutes for contemporary Westerners. Humans also spend about 50% more time growing our bodies than chimpanzees do, which is a huge energy cost prior to reproduction. There are estimates that our basic metabolic rates are 10% higher than chimpanzees. We spend a lot more energy storing fat and we pump out babies at a much higher rate. Given this profligate energetic strategy, there should be very strong selection against unnecessary physical activity. The prediction is that we should only be active when it's useful or necessary. There are two important exceptions: when you're a child at play learning social roles and developing skills; and when there are social benefits (for example, endurance dancing is a very important activity across the world).

WHY AREN'T HUMANS AS STRONG OR FAST AS OTHER ANIMALS?

Exercise is also a physiological tradeoff and humans were selected for endurance over speed and power. A consensus view is that our species is the triumph of brains over brawn, so we're really smart, but comparatively weak and feeble. This mischaracterizes how good humans are at athletics – we really excel at endurance. And we are really good at carrying, digging and working in hot environments.

It is well known humans were selected to be efficient walkers, but we are also efficient runners. Our bodies are filled with adaptations – short toes, springs in our arches, long Achilles' tendons, an enlarged gluteus maximus, expanded semi-circular canal systems – that make us superlative long-distance runners and enable us to do persistence hunting. Over long distances, even middle-aged Harvard professors like myself can outrun horses.

As bipeds, we generate about half the power and speed of a quadruped like a dog or a sheep. Compared to primates, humans also have fewer fast-twitch and more slow-twitch muscle fibers in key muscles; and we have more low-gear joints with biomechanical advantages that give us efficiency at the cost of velocity. Studies that measured the locomotion costs of chimpanzees on treadmills have found that humans walk more than twice as efficiently as apes. If humans walked as inefficiently as chimpanzees, male Hadza would spend approximately 120,000 calories more per year. That's like running a marathon every week.

HOW DID THE SURVIVAL OF THE FITTEST LEAD TO 21ST-CENTURY HEALTH PROBLEMS LIKE OBESITY?

Darwin never used that phrase, nor would he have, because natural selection is better described as 'survival of the fitter'. Natural selection doesn't produce perfection; it only weeds out those who are less 'fit' than others. My hypothesis is that selection for endurance has been a contributor to post-reproductive human longevity, but that now our collective health is suffering from evolutionary mismatches between the environmental conditions for which we evolved – including diet, physical inactivity, sleep and other lifestyle factors – and the environmental conditions that we now experience.

Our weird, post-industrial physical inactivity is hard to fix because of the ways our bodies evolved to allocate energy. You don't want to build capacities that are costly – heavier bones, for example, or costly active repair and maintenance mechanisms – unless you need them. That's energy you're not spending on reproduction. So our bodies evolved to use physical activity to match capacity with demand appropriately. A simple example is muscle – the 'use it or lose it' principle. Physical activity completely reverses muscle loss related to ageing: 90-year-olds have the same response to physical activity as 20-year-olds. Your muscles are also the body's largest producer of antioxidants or anti-inflammatories. As physical activity creates damage, it's not surprising that physical activity activates the body's natural repair and maintenance mechanisms. Humans are selected for longevity so we can be physically active to provision our offspring. There's no point in being a 70-year-old hunter-gatherer grandmother if you can't go out to forage and dig for several hours a day. These are physical activities that combat senescence.

> "Human bodies are filled with adaptations that make us superlative endurance runners. Over long distances, even middle-aged Harvard professors like myself can outrun horses"

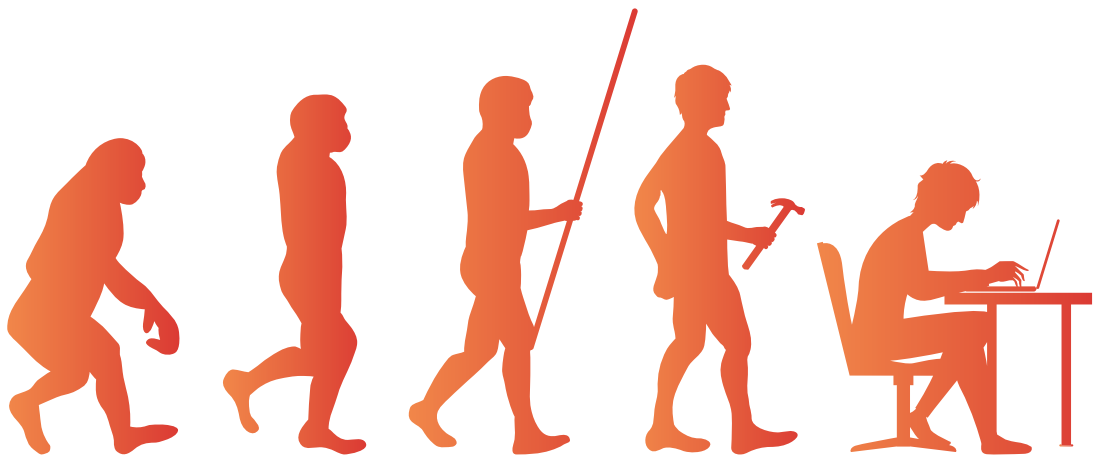
Hypertension is arguably the biggest cause of death and disability in the world today, but not in active hunter-gatherer populations. Lifelong endurance activity affects not only the central cardiovascular system but also the periphery, causing arteries to expand and become more elastic, increase capillary beds and all kinds of good things which keep blood pressure low. It's the same story for age-related arthritis. Americans born before the Second World War are half as likely as later generations to develop age-related arthritis in the knee, and this is partly related to physical activity.

HOW CAN UNDERSTANDING THE EVOLUTION OF THE HUMAN BODY HELP US GET IN SHAPE?

Even moderate physically activity means you'll probably have a longer life span and a longer health span. Just 150 minutes of exercise a week lowers the risk of dying from chronic, non-infectious diseases by 50% (the risk of hypertension drops by 40%, colon cancer by 60%, breast cancer by 30-50%, diabetes by 50%, it's the single best way to prevent Alzheimer's...). If your activity is at hunter-gatherer levels, there's an 80% reduction in mortality rate. We often call these diseases of ageing – and they do occur more commonly as you age – but they're not caused by ageing.

And yet less than 50% of American adults are active for more than 150 minutes a week. Hundreds and hundreds of interventions have tried to get people to exercise more and it's the most depressing literature you can read. Money, texting, Fitbits... nothing works very well.

If we're going to solve this problem, we'll need an evolutionary and behavioral approach. After all, people are doing what we evolved to do. The basic evolutionary strategy is to work as little as possible and not waste energy except when necessary. The important exceptions are to be physical active when it's fun or for social reasons. If you could get tenure by exercising with your tenured colleagues, you'd be out there! We have to figure out how to make physical activity necessary, valuable, social and fun.



FIND OUT MORE

When he's not studying or practicing barefoot running, Daniel is also interested in the evolution of other physical activities such as walking, carrying, throwing, sweating, and chewing. He has published several books including *The Evolution of the Human Head* (2011) and *The Story of the Human Body* (2013).

> **See scholar.harvard.edu/dlieberman**

Batek are traditional hunter-gatherers. In this picture they are using bamboo sticks as fishing poles

VIVEK VENKATARAMAN

SMALL STEPS FOR MAN

Why are pygmies so short?

The small size of many hunter-gatherers living in tropical rainforests is often attributed to their inhospitable habitat, which harbors little food for humans and multiple pathogens. But the adaptive benefits of a pygmy phenotype have not been clearly established. Research by IAST anthropologist and ecologist Vivek Venkataraman is the first to present empirical evidence that short people are better at walking in dense vegetation.

Struggling to keep pace with the Batek foragers through the rainforest of peninsular Malaysia, it wasn't long before Vivek and his research colleagues noticed how the jungle landscape could quickly throw them off their stride. On a treadmill, shorter people spend more energy than taller people to walk a given distance. But Vivek's team suspected that the unpredictable rainforest terrain might favor shorter legs by restricting step length.

"People tend to walk according to a highly predictable speed-step length relationship," Vivek explains. "The relationship between walking speed and cost of travel is U-shaped, and the speed at the minimum of this curve is necessarily higher for taller individuals. So we expected taller individuals to have higher preferred walking speeds in an open environment. In the rainforest, they would be forced to walk more slowly, while short individuals would be less constrained."

> "We show for the first time in ecologically relevant contexts that constraints on step length generate stature-dependent walking speed costs that could make short stature evolutionarily beneficial among forest-dwelling humans"

The researchers developed a biomechanical model to reflect their hypothesis, before testing it among two rainforest forager populations: the Batek in Malaysia, and the Tsimane of the Bolivian Amazon. Their results show that shorter stature makes foraging more energy-efficient.

"Whereas taller individuals took longer steps in open environments, all individuals were generally constrained to a similar (relatively small) step length in the forest. Individuals conformed to the preferred speed-step length relationship across environments, highlighting the applicability of biomechanical models to field settings. Most importantly, we show for the first time in ecologically relevant contexts that constraints on step length generate stature-dependent walking speed costs that could make short stature evolutionarily beneficial among forest-dwelling humans."

Speaking to *Newsweek* about his findings, Vivek insisted this is just the first step in understanding the benefits of being shorter in a rainforest environment: "There are many more avenues to investigate regarding human physiology in rainforests. For example, does small stature enable one to dissipate heat more effectively in a hot, humid, and windless rainforest? It should, on a theoretical basis, but the idea hasn't been explored yet."

The researchers' model could also provide insights about the evolution of short stature in other rugged habitats, such as the Highlands of Papua New Guinea; in other species, such as forest elephants and buffalos; and in at least one human relative, the Late Pleistocene short-statured hominin Homo floresiensis.

"Our model could contribute to directional selection for small body-size phenotypes among legged animals whenever environmental constraints cause size-dependent reductions in locomotor performance. Future field studies of naturalistic foraging that combine accelerometry, inertial measurement units, and GPS will improve the study of locomotion in the field."

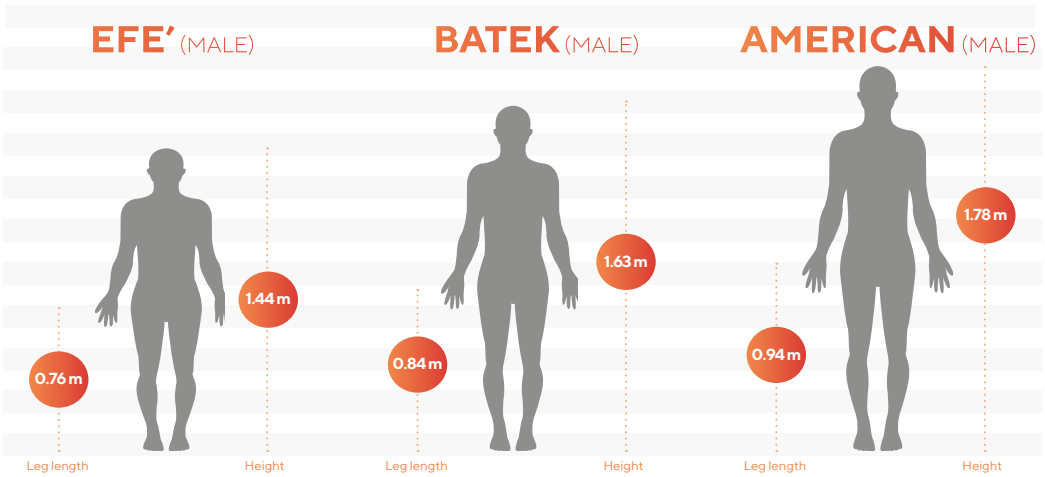
FIND OUT MORE

Vivek's interest in the ecological context of human evolution has inspired his study of foraging strategies, diet, energy expenditure, and social behavior among huntergatherers, as well as gelada monkeys and Ethiopian wolves. Previous research covered by *National Geographic* revealed that human feet are surprisingly well adapted to tree climbing.

> See www.iast.fr/people/vivek-venkataraman

WHO'S BEST AT WALKING ON THE WILD SIDE?

Pygmies are best known for their small size, adults grow to be under five feet tall (152cm). The name "Pygmy" is derived from the Greek word, "pyme" which means a cubit in height (46cm).

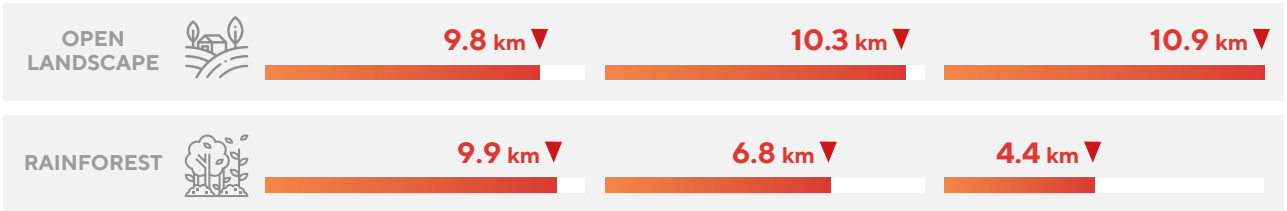


Efe pygmies from the Democratic Republic of the Congo live in the tropical Ituri rain forest. They are the shortest human population on record

The Batek are a population of orang asli (original people) living in central Peninsular Malaysia

The North American population has seen an increase in height over the last two centuries

Distance covered in 2 hours



Vivek found that taller individuals have higher walking speeds in open environments. In the rainforests, however, a shorter stature was shown to be more energy-efficient.

JONATHAN STIEGLITZ

HEALTHY BONES

Skeletons in the Amazon

IAST anthropologist Jonathan Stieglitz studies how ecological and social factors interact to influence human health. For the past 15 years, he has conducted bio-behavioral research on the Tsimane forager-horticulturalists of the Bolivian Amazon. In a unique new project, his team plans to be the first to study the relationship between physical activity and bone structure, and moderators of this relationship, in a contemporary pre-industrial population.

A Tsimane man clears his horticultural field

WHAT IS THE AIM OF THE PROJECT?

The project addresses long-standing debates in the evolutionary anthropological, kinematic and epidemiological literatures. Anthropologists want to understand why modern humans have fragile skeletons compared to our hominin ancestors and other extant great apes, and when this transition occurred. Researchers studying bio-mechanics want to understand the types and magnitude of forces applied throughout the human skeleton, and their functional impacts in terms of bone growth, maintenance and aging. Lastly, epidemiologists want to understand the causes and consequences of bone fractures, which are a massive public health challenge. In Europe, more than 20 million people are affected by osteoporosis. Worldwide, osteoporotic fractures affect one in three women and one in five men aged over 50.

Specifically, this project will test whether greater physical activity levels lead to greater bone strength and protect against age-related bone loss. We will also examine the extent to which bone tissue responses to habitual, physically intensive subsistence tasks are weakened by older age, female sex, energy limitation and a high pathogen burden. Collection of in vivo bone imaging and physical activity data in a pre-industrial population, as well as the linkage of these data to the existing Tsimane Health and Life History Project (THLHP) panel dataset, will present novel opportunities to study human bone structural variation.

> "Given the project's scope and integration with the existing Tsimane Health and Life History Project, it is highly unlikely that a similar dataset will ever be assembled"

WHY STUDY A PRE-INDUSTRIAL SOCIETY LIKE THE TSIMANE?

Behavioral components of subsistence economies likely play a major role in shaping morphology, yet most research on the relationship between physical activity and human bone structure is conducted using prehistoric skeletal remains – where behavior cannot be directly observed – or in modern industrial populations (among athletes, for example, or in exercise interventions) which possess few ecological features typical of human evolutionary history. Contrary to simple predictions derived from the hypothesis that greater physical activity promotes bone strength, our recent Tsimane studies using ultrasound and computed tomography (CT) find reduced bone strength and greater age-related strength decline among Tsimane compared to more sedentary matched controls in the US.

HOW WILL THIS PROJECT IMPACT THE SCIENTIFIC COMMUNITY?

By studying both behavior and morphology in a population whose lifeways share various features with those present over much of human history (such as high fertility, subsistence lifestyle, minimal public health infrastructure, high infectious exposures), this research will improve our ability to infer prehistoric activity patterns through analyses of morphological variation in the fossil record. We will also be able to more accurately determine the relative importance of physical activity, diet, disease burden, and other factors affecting bone structure in a pre-industrial population. We also hope to improve understanding of the morphological impacts of greater sedentism associated with major transitions in human history, including the transition from hunting and gathering to agriculture, and from rural to urban settings.

Given the project's scope and integration with the THLHP, it is highly unlikely that a similar dataset will ever be assembled in a pre-industrial population. The dataset will serve as an archive for future scientists no longer able to study impacts of modernization on activity profiles and bone structure in populations undergoing socioeconomic change. CT is rarely conducted outside of industrialized societies, so this project will provide proof-of-concept for future potential cross-population comparisons, and a baseline for potential longitudinal study of the Tsimane. Lastly, this project will continue to provide training opportunities for researchers at various levels.

HOW WILL THE TSIMANE BENEFIT?

The THLHP code of ethics for conducting long-term fieldwork is to provide aid and assistance where possible, regardless of whether individuals participate in our research, from specialized medical care to humanitarian efforts following environmental disasters. Since the THLHP's inception in 2002, more than 45,000 person-visits with a physician providing clinical care have been conducted. For Tsimane requiring specialized medical care, we have facilitated their transport and treatment further afield. The THLHP has trained more than 45 Tsimane as project personnel, who have contributed critical advice on managing logistics and navigating politics. It has provided educational workshops on disease detection and prevention, donated shortwave two-way radios and medical equipment, and provided further clinical training to Bolivian medical professionals. Biannual reports are provided to the Tsimane political council and local authorities to help solicit government resources.

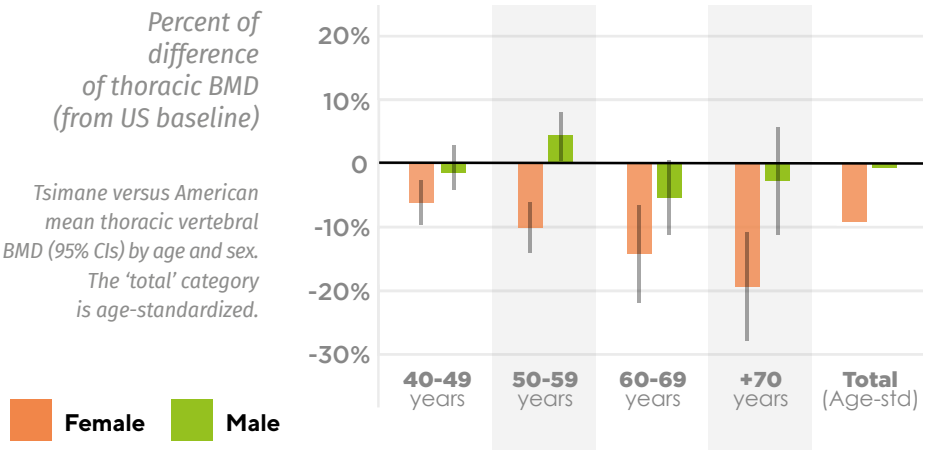
For this project, we will conduct research dissemination workshops to address – with guidance from Tsimane – how findings can assist in developing more effective Tsimane health programs. We will also use local media outlets to raise awareness of local health problems. From past THLHP experience, such presentations can improve strained relations between Tsimane and Bolivian nationals, and increase access to quality healthcare. We will develop new partnerships within Bolivia, for example, with Ministry of Health officials, who have already expressed interest in THLHP findings. Findings from this new project will provide knowledge of direct epidemiological relevance that can be used by Bolivian and other government officials for health service planning. This project will also build capacity among the Tsimane to more effectively participate in their own governance.

Thoracic computed tomography (CT) of a Tsimane adult, German Busch Hospital, Trinidad. Resulting CT images permit assessment of thoracic vertebral bone mineral density and fracture.

BONE STRENGTH IN AMERICANS AND TSIMANE

Percent of difference of thoracic BMD (from US baseline)

Tsimane versus American mean thoracic vertebral BMD (95% CIs) by age and sex. The 'total' category is age-standardized.



This graph compares Tsimane and American (Los Angeles county) mean thoracic vertebral bone mineral density by age and sex. Tsimane women show lower bone strength compared to Los Angeles women, which may be explained by their high fertility (Tsimane total fertility rate = 9 births per woman). Minimal BMD differences exist between Tsimane and American men, suggesting that systemic factors other than fertility (for example, diet or infectious exposures) do not easily explain Tsimane women's lower BMD.

FIND OUT MORE

Previous research by Jonathan has revealed that the Tsimane have the world's healthiest arteries. To read more about his work with the Tsimane Health and Life History Project, which he now co-directs.

> See https://sites.google.com/site/jonathanstieglitz/ and http://tsimane.anth.ucsb.edu

DIANE WOOD

21ST-CENTURY CHALLENGES

How can we regulate beyond borders?

Chief Judge for the US Court of Appeals for the Seventh Circuit and a senior lecturer at the University of Chicago, Diane Wood is also the former head of international operations in the US Justice Department's anti-trust division. Following her visit to IAST earlier this year, we present excerpts from her talk about how to regulate a world in which national borders are increasingly irrelevant to 21st-century trade, relationships, and crime networks.

Transnational regulation is getting more complicated. America is home to 15 of the world's 20 most valuable tech firms, while Europe has just one. But the primary authority regulating those companies is not located in Sacramento, or in Washington, DC. It's in Brussels. The EU Commission has not been shy about exercising its power. Over the past three years, Google has been hit with fines totaling €8.2bn for abusing its dominant position, and there's no sign that the Commission is finished.

National boundaries have become increasingly irrelevant to laws, regulations and their enforcement. The mechanisms for coordinating traditional regulatory areas have improved but we are getting to the point where we have to ask whether territorial, sovereign lines work for us at all. This construct dates back at least to the Peace of Westphalia in 1648, but the world is a really different place now.

> "The mechanisms for coordinating traditional regulatory areas have improved but we are getting to the point where we have to ask whether territorial, sovereign lines work for us at all"

The benefits of joint action have never been greater. Consider the problem of multinational frauds, the scourge of child pornography that's perpetrated over the dark net, the persistence of transnational price-fixing cartels, or threats to personal privacy based on the internet and modern technologies. Consider also the threats to intellectual property (IP): it's not enough to have a perfect legal regime in your own country if some other country is tolerating piracy of the IP that you spent money developing. In this world, different regimes don't really work.

One of the solutions is self-restraint. Sometimes called negative comity, this is something that was pioneered in anti-trust, and you can see it in situations where several countries have an interest. If a country thinks the center of gravity of a cartel is Canada, it might say, 'Let the Canadians take the lead and we'll follow behind.' That's reflected in lots of bilateral agreements and it works reasonably well.

Next, there's the more ambitious positive comity: if two countries have similar laws or bilateral agreements that would allow one of them to call on the other and say, 'please consider taking this action'. The US and Europe have an agreement that's been invoked when a cartel violates both European and US competition law.

There are more formal mutual assistance treaties which tend to cover crime, but they could be expanded. You could imagine international standards with dispute resolution, as you have in the IP area under the World Trade Organization (WTO). Perhaps this model could be explored more aggressively – there is a very elaborate dispute settlement process under the auspices of the WTO.

You could imagine expanding jurisdictional conventions, such as the ones administered by the Hague Conference on Private International Law. There are quite a few such conventions: on international sale of goods, choice of law, child abduction, and so on.

We're very used to jurisdictional complexity in the US. It's an amazing system: we have a single federal government, 50 states, the District of Columbia, 16 territories, 562 recognized Indian tribes and nearly 40,000 general-purpose local governments. We tend to muddle along and somehow make all of this work. Overlapping jurisdiction is a daily reality – it exists for environmental regulations, telecommunications, anti-trust, in almost everything I can think of. So, some ways of bringing everybody into the same room would help.

We're not going to eliminate regulatory conflict; there are too many countries, too many different interests. But maybe we will manage that regulatory conflict better and find ways of enhancing productive cooperation. I'm cautiously optimistic.

To paraphrase Dr Martin Luther King, I hope that the arc of the moral universe bends towards international harmony.

FIND OUT MORE

As well as regulation and anti-trust, Diane is a recognized authority on many other topics, including discrimination, the rule of law, the First Amendment, and the nature of law in a changing world.

> **See www.law.uchicago.edu/faculty/wood-d**

SEX AND SEXUAL ORIENTATION

IAST director Paul Seabright on Diane Wood:

"It's a widely shared opinion that Diane should have been appointed to the US Supreme Court. And most people who say that think the comparison is more flattering to the Supreme Court. A famous judgement, Hively vs Ivy Tech Community College, demonstrates how she thinks outside the box. The case was about a woman who had been denied promotion by the college because she was in a relationship with another woman. The District Court dismissed the case, arguing that discrimination on the basis of sexual orientation does not violate the Civil Rights Act. But writing for the Seventh Circuit majority, Diane made the beautifully simple point that if Kimberly Hively had been a man in that relationship with that woman, she would not have faced discrimination; so this was clearly a case of discrimination on the basis of sex. When everybody was turning around the point but failing to see it, she cut through and made it in a way that is now established law. In Diane's words: "It's hard to take the sex out of sexual orientation.""

Where are they now?

Anthropologist Heidi Colleran and political scientist Charlotte Cavaillé were IAST research fellows from 2014 to 2016. In spite of their busy schedules in Germany and the US, they took the time to tell us how their lives and research have developed since leaving Toulouse.

Heidi Colleran

Anthropologist leading an independent research group at the Max Planck Institute for Evolutionary Anthropology

WHAT DOES YOUR PROJECT INVOLVE?

It's about the cultural evolution of reproduction. There is a conceptual and theoretical blind-spot in the way evolutionary social sciences approach reproductive behavior. On the one hand, reproduction in past societies tends to be 'naturalized': it is narrowly tied to material resources, ecological determinants, and the cultural aspects are sort of invisible. On the other hand, contemporary high-fertility societies are often interpreted as being driven by cultural determinants. Then there's this idea that women reproducing in the lowest-fertility countries, like Germany, are fully autonomous in their decision-making, somehow outside the realm of culture. So you get this mix of ideas about conscious and unconscious reproductive decision-making, and a prioritizing of economic or cultural determinants depending on the population you're studying.

My project is about putting pressure on the sometimes hidden assumptions about reproduction in evolutionary anthropology, and developing a more coherent approach by drawing together cultural evolutionary theory with humanities research in this area. Rather than focusing on one methodological or theoretical approach, I'm hoping exciting new synergies will come out of building a group of different researchers to explore these questions together.

WHAT ARE YOUR RESPONSIBILITIES?

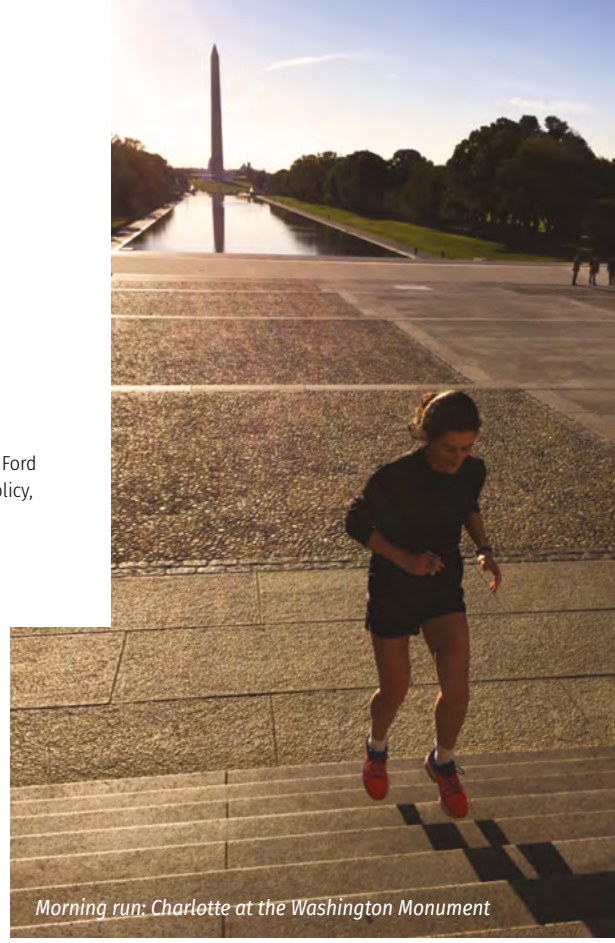
Being an independent group leader in the Max Planck system is a big step up and I feel unbelievably lucky as well as a bit intimidated. People are now coming to me for advice, which is pretty crazy. With a substantial budget and few constraints on your time, there are no excuses for not doing your best work. But there's also a transition from a "publish or perish" mentality to a longer-term research strategy. I have to balance the need for research output with the fact that I'm now in a position to hire people with their own research profiles and who will want to take things in different directions.

HOW DID IAST HELP YOU EVOLVE?

The exposure at IAST to different disciplines and their working styles was great preparation. My project would have been much more narrowly focused before.

Warm welcome: Heidi arrives for fieldwork in Vanuatu

Charlotte Cavaillé
Political scientist moving from Georgetown to the Ford School of Public Policy, Michigan



Morning run: Charlotte at the Washington Monument

I also understand more clearly where I fit as a researcher in the broader arena of the social sciences. Coming to IAST with quantitative chops (at least for my field), I thought I would become more 'technical'. Ironically, the opposite seems to have happened as I've seen where I can be most useful to other fields.

That has reinvigorated my commitment to ethnography, boosted my confidence to explore publishing options (I'm now working on a book project), and convinced me that the major gap in my field is a lack of humanities-style research. I now feel I can take a few risks in both hiring and research to address this gap. For example, I'm hoping to attract people trained in history, philosophy and socio-cultural anthropology, and I'm more confident and realistic about how the team could work. Among other things, different publishing models and timelines, presentation and discussion styles need to be recognized and planned for.

HOW DOES LIFE IN GERMANY COMPARE TO FRANCE?

I grew up speaking German – my mother is from Munich – but I never lived in Germany so it's really nice to get to know the culture better. I miss French food, wine and l'art de vivre, especially the more relaxed attitudes to early mornings in Toulouse and the tolerance for being late for dinner. Shared consumption of delicious things is such an important way of making work and social connections in France, and there's always a lurking sense of indulgence.

In Germany, there's a much clearer separation between work and leisure (and frankly, fewer delicious things), which means you can focus on work but then go wild in your spare time, which I also really appreciate. In Germany, New Year's Eve is like navigating a war zone with all the fireworks and bottles in the streets – it can feel dangerous and excitingly anarchic. New Year's Eve in France involves not stabbing yourself with the oyster knife.

WHAT IS THE CURRENT FOCUS OF YOUR WORK?

I am investigating how rising inequality, fiscal stress and immigration are reshaping popular attitudes toward mature welfare states in post-industrial democracies. In the book I'm writing, *Asking for More: Demand for Redistribution in the Age of Inequality,* I explain why, in countries where inequality has increased the most, such as Britain and the United States, voters are not asking for more income redistribution.

In 2016, after two years at IAST, I spent two years at Georgetown University's School for Foreign Service, which is mostly international relations. I then moved to the Ford School, which is more focused on social policy and so a better fit for my research. I will be starting at Ford as an Assistant Professor in Public Policy once I have finished a fellowship at the Center for the Study of Democratic Politics at Princeton.

> "IAST is the best thing that could have happened to me"

HOW HAS IAST HELPED YOU IN YOUR NEW POSITION?

IAST has had a huge influence on my work. Hanging out with economists and evolutionary biologists strengthened my analytical skills, especially for the theory of human behavior, and how context affects how people reason and behave.

I have been exposed to literature – behavioral economics, evolutionary economics, moral psychology – that is not well known in political science and has shaped the book I am writing on perceptions of fairness and attitudes toward the welfare state. IAST also awarded me (with Karine Van der Straeten and Daniel Chen) a seed grant that was the foundation for a project on how to measure policy preferences. I also made great friendships. IAST is the best thing that could have happened to me after my PhD: it shaped how I think, what I read, and has helped me launch a project that has attracted much attention from my peers and colleagues.

HOW DOES LIFE IN THE US COMPARE TO FRANCE?

The French are much more confrontational and willing to voice disagreement in public. American culture is a little different. I was in a student union as an undergrad in France, and I'm socialized to interact with the university administration assuming they don't have your best interest in mind. American private universities are different – I had to adapt.

FIND OUT MORE

Heidi's research
> **https://www.eva.mpg.de/ecology/staff/heidi-colleran**

Charlotte's book project
> **https://charlottecavaille.wordpress.com/book-project/**

DISCOVER OUR NEW BUILDING

We have moved into our new building at
1 Esplanade de l'Université, Toulouse, France.

We have some exciting events coming up in 2020
and would love to see you there.
Check them out: **www.iast.fr**
and don't hesitate to reach out for more details.

IAST

www.iast.fr

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-001.