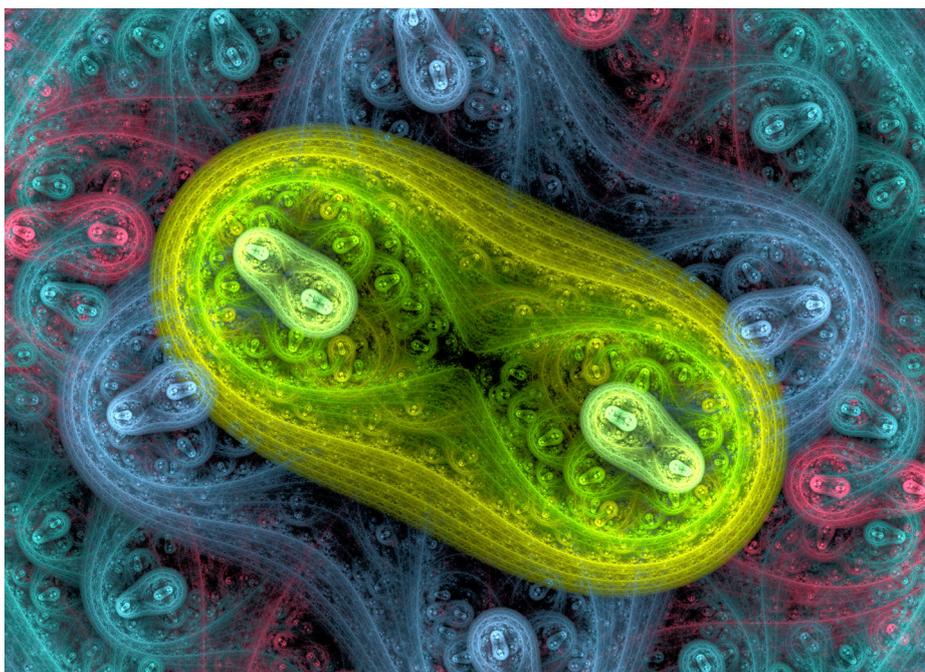


# Antimicrobial Resistance

CAGE research examines the contemporary global public health issue with a historical lens

New CAGE analysis addresses the global public health threat posed by antimicrobial resistance to drugs commonly used to combat a wide range of diseases. In a series reports, the authors use historical evidence associated with contagious diseases over the centuries to highlight and inform contemporary public health strategies, as well as to put the current crisis into context.



## INSIDE

- The Festival of Social Sciences presents 'Economics in the Real World'
- Anandi Mani delivers public lecture, 'Does money make you smarter?'
- CAGE researchers explain the happiness-productivity link

**'Health, Well-being and Antimicrobial Resistance: Insights from the Past for the Present; A Research Agenda'**, an overview of three targeted reports, synthesise the findings of three individual reports for the Economic and Social Research Council. The conclusions emphasise that while antimicrobial resistance is likely to pose some serious problems, history offers examples of numerous strategies governments can employ to maintain public health. Experience in dealing with diseases - among them, the plague, tuberculosis, and methicillin-resistant *Staphylococcus aureus* (MRSA) - show that the impact of antimicrobial resistance can be mitigated. Research is needed to target the most efficient and effective public health policies.

Continued on page 2

## Individual reports are:

### 'The first stages of the mortality transition in England: an evolutionary perspective'

**Romola Davenport**, historical demographer and geographer at the Cambridge Group for the History of Population and Social Structure, examines shifts in the major infectious causes of death from 1600-1900, noting, especially, the roles played by age, poverty, urbanisation and industrialisation. Measures taken to deal with smallpox and measles in England are contrasted in detail.

### 'The welfare cost of antimicrobial resistance - tuberculosis as an illustrative example'

**Kerry Hickson**, CAGE associate, analyses the forces behind one of the most valuable health gains during the 20th century: the decline and virtual elimination of tuberculosis in England and Wales. These gains appear to be in jeopardy now with the emergence of multi-drug-resistant tuberculosis as a threat to both the developed and developing worlds. The history of tuberculosis suggests that some of the more extreme, apocalyptic forecasts are unlikely because preventive medicine (including vaccination), and public health measures can play a major role in addressing the problems, as they have done in the past.

### 'The Challenge of Antimicrobial Resistance: Lessons from the Past for the Present and the Future'

**Cormac Ó Gráda**, professor in the School of Economics at University College Dublin, puts current antimicrobial resistance issues into historical context, concluding that while concerns are warranted, a return to 'the dark ages of medicine' is unlikely. Even in the face of antimicrobial resistance, existing and new public health measures can limit the negative consequences and have the potential to reduce consumption. Challenges on the issue require a focus on both the supply of antimicrobials (the 'pipeline') and the demand for them (consumption). The pipeline for new drugs is not dry, and public health education can usefully restrain consumption.

## Congratulations to CAGE researchers



### CAGE associate awarded €1.983 million European Research Council grant

**Christopher Woodruff**, CAGE internal associate and a professor in the Economics Department at The University of Warwick, has received a European Research Council (ERC) Advanced Grant of €1.983 million to advance his research agenda analysing the impediments to productivity gains in the manufacturing sector in developing countries. The ERC Advanced Grants are awarded to exceptional, established research leaders to allow them to pursue ground-breaking, high-risk projects that open new directions in research.

Prof. Woodruff's research seeks to advance understanding of the challenges to increasing productivity in the developing world. Though differences in productivity explain much of the differences in income levels across countries, little is known about how to improve productivity, which is the foundation for higher wages and, ultimately, better living standards in poor countries. Prof. Woodruff's work involves gathering and examining uniquely detailed data from hundreds of factories in developing countries. The sub-factory-level data, coupled with a new method for comparing productivity of diverse products, will allow Prof. Woodruff to conduct cross-country analysis of productivity with an unprecedented level of detail in six to eight lower-income countries in Asia and Africa. Currently underway in Bangladesh, Pakistan and Myanmar, the research addresses a broad array of issues that may affect productivity, including matters related to gender, supervisor training, worker stress and strikes.



### CAGE associate awarded ESRC Future Research Leader grant

**Mirko Draca**, a CAGE internal associate and an assistant professor in the Economics Department at The University of Warwick, has been awarded a two-year Economic and Social Research Council (ESRC) Future Research Leader grant. The ESRC Future Research Leaders scheme is intended to enable outstanding early-career social scientists to acquire the skills set to become the future world leaders in their field.

Dr Draca's research interests focuses on labour economics and applied microeconomics. His research project, 'The Analysis of Automation by Means of Automation', uses automated, machine learning classification techniques to analyse historical job description text, and to look at the rise of automation/technology within jobs. The project employs the same statistical techniques that form the basis of technologies such as consumer recommender systems, as used on websites such as Netflix or Amazon, and self-driving vehicles, but puts these techniques to use in addressing social science questions relating to the automation of jobs.

# Research grants

## CAGE awards eight economics research grants

Eight researchers have received small grants funded by CAGE and the ESRC to advance research on frontier topics. The recipients and their projects are:

**Miguel Almunia**, CAGE research associate and assistant professor in the Economics Department at The University of Warwick: 'Do Enforcement Policies Effect Individual Behaviour?'. The project examines the success of the Spanish government in reducing road fatalities through the use of enforcement policies. The research aims to generalise the findings to other contexts in which measuring the outcomes of enforcement policies has proved difficult.

**Clement de Chaisemartin**, CAGE research associate and assistant professor in the Economics Department at The University of Warwick: 'From Non-Cognitive to Cognitive Skills: Mechanisms and Peer Effects'. Through a Randomised Controlled Trial, the project aims to evaluate a student behavioural training programme in Chile. The project will examine whether the behaviour and learning of disruptive students improve, and whether there are also beneficial effects on their non-disruptive classmates.

**Mirko Draca**, CAGE research associate and assistant professor in the Economics Department at The University of Warwick: 'On Target? Firm-Level Analysis of the Impact of International Sanctions Policies'. The research will evaluate the impact of recent 'targeted' economic sanctions on firms in Iran and Russia.

**Victor Lavy**, CAGE research associate and professor in the Economics Department at The University of Warwick: 'On the Origins of the Gender Human Capital Gap: Short- and Long-term Effects of Teachers' Stereotypes'. The project will measure and test the effect of gender stereotypes in school. The goal is to explore how primary school teachers' biases about boys' and girls' maths and language abilities affect future

academic achievements and the students' high school enrolment in advanced maths and social sciences.

**Michael McMahon**, CAGE research associate and associate professor in the Economics Department at The University of Warwick: 'Expanding the application of textual analysis in applied economics'. The project aims to encourage the use of computational linguistics and network analysis tools in a wider array of economics fields, including economic history and development economics.

**Luigi Pascali**, CAGE research associate and assistant professor in the Economics Department at The University of Warwick and Pompeu Fabra University: 'The Wind of Change: Maritime Technology, Trade and Economic Development'. The project examines the effect of the first wave of trade globalisation (1870-1913) on economic development as the result of a new technology: the steamship.

**Eugenio Proto**, CAGE research associate and associate professor in the Economics Department at The University of Warwick: 'Cooperation and Personality'. The research will test whether cooperative and trusting workplace behaviour can be explained by personality traits, with a particular look at the roles played by empathy and a willingness to comply with norms and rules.

**Roland Rathelot**, CAGE research associate and assistant professor in the Economics Department at The University of Warwick: 'Ethnic Price Discrimination on the On-line, Short-Term Rental Market'. The project aims to measure the size of the price differential for ethnic minority and majority owners of short-term rental properties in European and North American markets.

## CAGE welcomes new PhD student



**Eric Melander, a PhD student in the Economics Department at The University of Warwick, has been awarded a studentship funded by the Economic and Social Research Council.**

The ESRC studentship brings Eric to CAGE to pursue his PhD, and to continue his research agenda. His current work examines how student achievement is affected by making information about school performance widely available to the public in school systems characterised by high degrees of school choice and competition between schools.

Eric's research interests include labour economics, the economics of education and economic history. A native of Gothenburg, Sweden, Eric received both his BSc in Economics and Economic History, with First Class Honours, and his MRes from the Economics Department at The University of Warwick. He was awarded the Greenlite Prize for best performance in Economics and Economic History. He has held internships with the ifo Centre for the Economics of Education and Innovation, and the Global Business Services division of SCA Hygiene Products SE.

## CAGE seminars offer insight into the research frontier on a wide variety of economics issues. Guests presenting at the CAGE seminar series in the Autumn Term include:

- **Jérôme Adda**, professor of economics at Bocconi University and a managing editor for the Review of Economic Studies. His research interests include health economics, labour economics and macroeconomics. His main contributions have been on the effect of public policies on health behaviour, the links between income and health, the role of human capital on career choices over the life cycle. A recent paper examines the career costs for women of having children including the how intended fertility (before children are born) affects the type of career a woman chooses.
- **Christian Dustmann**, professor of economics, University College London, and director of the Centre for Research and Analysis on Migration. His research interests include migration, economics of the family, economics of education, wages and mobility, economics of crime and applied microeconometrics. Recent papers have examined the economics of temporary migration, job-search networks and the long-term effects of tracking middle school students.
- **Philippe Aghion**, the Robert C. Waggoner Professor of Economics at Harvard University. In 2001, he was awarded the Yrjo Jahnsson Award of the best European economist under age 45. His research focuses on the economics of growth. With Peter Howitt, he pioneered the so-called Schumpeterian Growth paradigm which was subsequently used to analyse the design of growth policies and the role of the state in the growth process. His recent work examines the correlation between various measures of innovativeness and top income inequality in the United States over the past decades.
- **Marianne Bertrand**, the Chris P. Dialynas Professor of Economics at the University of Chicago Booth School of Business and co-director of the Social Enterprise Initiative. She is an applied micro-economist whose research covers the fields of labour economics, corporate finance, and development economics. Recent work has examined the effects on the female labour market of gender quotas on company boards; whether minority defendants are treated differently than white defendants by the US legal system; and the effects of a wife earning more than her husband on marriage, divorce, division of home tasks.
- **Martina Bjorkman-Nyqvist**, assistant professor in the Stockholm School of Economics. Her work focuses on health and education in developing countries, with an emphasis on the provision and impact of public services to the poor in Sub Saharan Africa. A recent paper assesses the results of a financial incentive program - a lottery - with relatively low expected payments but with high prizes conditional on negative STI test results.
- **Pascaline Dupas**, associate professor of economics at Stanford University. Her research interests lie in development economics, health, education, savings and governance. Recent work has shed new light on the relationship between education and sexually-transmitted infections (STIs) and fertility in the context of Kenya. In a seven-year randomised controlled trial, she found that education subsidies reduce early pregnancy but not STIs; however, both are reduced when subsidies are combined with a specific government-led HIV training.
- **Roland G. Fryer, Jr.**, the Henry Lee Professor of Economics at Harvard University, and faculty director of the Education Innovation Laboratory. He was awarded a MacArthur 'Genius' Fellowship and the John Bates Clark Medal -- given by the American Economic Association to the best American economist under age 40. His research combines economic theory, empirical evidence, and randomised experiments to help design more effective government policies. His current research focuses on education reform, social interactions, and police use of force. Among his recent papers are: the causes and consequences of distinctively black names; the effects of the Teach for America program on race relations; and the effect of using loss aversion (paying teachers in advance and asking them to give back money if student don't improve sufficiently) to raise student test scores.

# ESRC FESTIVAL OF SOCIAL SCIENCE



## DOES MONEY MAKE YOU SMARTER?



### Anandi Mani presents public lecture discussing how poverty influences economic decision-making.

Anandi Mani, CAGE senior researcher and knowledge exchange fellow, delivered a public lecture, entitled, 'Does money make you smarter? The effects of extreme poverty on economic decisions' as the centrepiece of the ESRC Festival of Social Sciences. The lecture took place on 12 November, 2015, at the Warwick Arts Centre.

Dr Mani's behavioural economics research has led to new insights about the relationship between poverty and the economic decision-making skills of the poor. As she explains, 'There is evidence that people who live in extreme poverty around the world often make poor economic decisions. They do not invest enough in their farms, their children, and their own health and wellbeing. Have these people been reduced to poverty poor because of the bad decisions they made, or do they come to make bad decisions because they are poor to start with?'

Professor Mani presented the evidence that she and her collaborators have collected, and discussed the implications for effective economic policies and programmes aimed at alleviating chronic poverty.

The Festival of Social Sciences is a nationwide event organised by the ESRC (Economic and Social Research Council). Its aim is to offer insight into some of the UK's leading social science research and how it influences our social, economic and political lives.



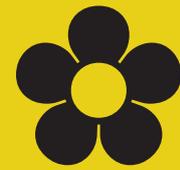
## CAGE researchers present 'Economics in the Real World' to A-level students

A team of CAGE researchers delivered a series of free discussions designed specifically for A-Level economics students considering university choices. The event, entitled 'Economics in the Real World,' was held on 10 November, 2015, on The University of Warwick campus.

The lectures were part of the Economic and Social Research Council's annual Festival of Social Sciences. They showcased research being carried out by economists in order to demonstrate how economic research affects business, government and society. The event aimed to help students understand the importance of economics and to spark interest in pursuing social sciences at the university level.

Lectures were conducted by economists from The University of Warwick Economics Department, including Dr Claire Crawford and Dr Tom Martin; assistant professor and CAGE associate Roland Rathelot; associate professor and CAGE associate Rocco Macchiavello, and professor and CAGE associate Marcus Miller. CAGE Director Nicholas Crafts chaired the event.





# The happiness productivity link

CAGE policy briefing paper examines how workers' performance and well-being interact

CAGE and the Social Market Foundation hosted a lunch-time discussion session to celebrate the launch of a new briefing paper, 'Are "happy" workers more productive? Results and implications of recent experimental work on well-being'. The paper is by Eugenio Proto and Daniel Sgroi, both CAGE researchers and associate professors in the Economics Department at The University of Warwick. Proto is a CAGE research fellow, and Sgroi is a CAGE Leader for Theme Three (How can the measurement of well-being be improved, and what are the implications for policy?).

The presentation was the latest in the centre's Global Perspectives Series, a collaboration between CAGE and the Social Market Foundation. The event was held on 28 October 2015, at the Social Market Foundation's London offices.

The authors presented evidence showing that levels of personal happiness affect levels of work output. Well-being boosts performance, while major life shocks, such as bereavement and family illness, are associated with lower productivity, they find. The authors discussed the implications of these findings for the workplace and for policymaking. They addressed ways in which workplace and government policies might be able to capitalise on these findings in order to enhance productivity. They also touched on the issue of related safeguards that might be needed for workplace policies and practices.



# CAGE researchers offer insights to HM Treasury

A policymaker's guide to economic history, and a new proxy for economic happiness

Two CAGE leaders discussed their research with representatives of HM Treasury as part of a Government Economic Service conference day on 12 October, 2015.



CAGE director **Nicholas Crafts** presented a lecture, entitled, '*How Should Policymakers Use Economic History?*'.

In the wake of the recent Great Recession, it has often been claimed that 'economists should know more economic history', Crafts observed. He went on to ask, 'Is this practical advice? What can be gained? What are the pitfalls?' The presentation explored related issues using illustrations from interwar macroeconomic history. Crafts, a professor in the Economics Department at The University of Warwick, is widely recognised for his scholarly work in economic history, which provides insights to inform current policy debates.



**Daniel Sgroi**, CAGE Leader of Theme Three (How can the measurement of well-being be improved, and what are the implications for policy?), presented a lecture on the historical drivers of happiness. The presentation, '*Historical Analysis of National Subjective Well-*

*being using Millions of Digitized Books*', discussed findings from a new index of subjective well-being. The index is the creation of Sgroi, an associate professor in the Economics Department at The University of Warwick, and two Warwick colleagues, Psychology Professor Thomas Hills, and Associate Economics Professor and CAGE Associate Eugenio Proto. Sgroi gave an overview of the approach they took to creating the 'HPS Index', which relies on valence norms, large-scale survey-based ratings of how certain words make people feel. The researchers used new techniques to examine historical language use in texts of millions of digitised books in the Google Books corpus, he said. The aim of the project is to gain insight into the rise and fall of subjective well-being over centuries, and to analyse the historical causes of happiness.



## CAGE Working papers

The full papers are available on the CAGE website at:  
[www2.warwick.ac.uk/fac/soc/economics/research/centres/cage/onlinepublications/working-papers/](http://www2.warwick.ac.uk/fac/soc/economics/research/centres/cage/onlinepublications/working-papers/)

### The Political Economy of Liberal Democracy

*Authors: Joram Mayshar, John Alfred Weinberg professor of economics in the Economics Department at Hebrew University of Jerusalem; Omer Moav, CAGE associate and professor in the Economics Department at The University of Warwick and the School of Economics, Interdisciplinary Center, Herzliya; Zvika Neeman, professor in the Berglas School of Economics at Tel Aviv University; and Luigi Pascali, CAGE associate and assistant professor in the Economics Department at The University of Warwick and Pompeu Fabra University. CAGE working paper no. 238*

The authors propose that the development of social hierarchy following the Neolithic Revolution was the result of the emergent elite's ability to appropriate cereal crops from farmers, and not a result of land productivity, as argued by conventional theory. The authors argue that cereals are easier to appropriate than roots and tubers, and that regional differences in the suitability of land for different crops therefore explain differences in the formation of hierarchy and states. The authors create a model that illustrates their main theoretical argument. Their empirical investigation shows that land suitability for cereals relative to suitability for tubers explains the formation of hierarchical institutions and states, whereas land productivity does not.

The prevailing literature attributes the emergence of hierarchy to the increased productivity of agriculture.

This increase in productivity is presumed to have generated food abundance (surplus), which, in turn contributed to rising population, and facilitated specialisation in crafts, exchange, and the rise of the elite. Without denying that an increase in productivity did occur, the authors contend that the logic behind these proposed mechanisms is flawed. They argue that surplus was neither necessary nor sufficient for the rise of hierarchy. Instead, they propose that cereal farmers were more vulnerable than foragers to appropriation, and this is the key feature that brought about the rise of the elite, and led to subsequent major developments in social hierarchy. Thus, while the authors do not challenge the prevailing perception that the transition away from egalitarianism toward hierarchy was correlated with the shift to agriculture, they contend that the causality is more nuanced than is commonly perceived.

### Historical Analysis of National Subjective Well-being using millions of Digitized Books

*Authors: Thomas Hills, professor in the Psychology Department at The University of Warwick; and Eugenio Proto, CAGE associate and associate professor in the Economics Department at The University of Warwick; and Daniel Sgroi, CAGE theme leader and associate professor in the Economics Department at The University of Warwick. CAGE working paper, no. 236*

The authors undertake the first attempt to construct a long-run historical measure of subjective well-being using analysis of language derived from millions of books that have been digitized. While existing measures of subjective well-being go back to at the most the 1970s, the authors are able to go back at least 200 years further using the method. They analyse data for six countries (the US, UK, Germany, France, Italy and Spain). They create an index (the 'HPS Index') based on valence norms, large-scale survey-based ratings of how certain words make people feel.

The objective of the research is to produce a proxy for subjective well-being dating back to 1776 (the American Declaration of Independence), enabling direct comparisons with GDP over that period. The authors assess the effects of the buoyant improvement in life expectancy, the conflicts and civil wars that deeply characterised the West in the last two centuries, and the rise of pro-active macroeconomic fiscal and monetary policies.

The authors find that GDP and life expectancy have a strong positive effect on well-being, while conflict (especially internal) has a negative effect. They find a positive effect of public government debt, suggesting an increase in welfare following a fiscal expansion. They also find that democracy seems to have a negative effect, a result they interpret as stemming from dictatorial regimes' control of the press and published literature.

### The Political Economy of Risk and Ideology

*Authors: Matthew Dimick, Associate Professor of Law at the SUNY Buffalo Law School, and Daniel Stegmüller, CAGE associate, professor of quantitative methods in the social sciences at the Graduate School of Social and Economic Sciences at the University of Mannheim; and associate member of Nuffield College, University of Oxford. CAGE working paper no. 237*

The authors provide what is believed to be the first theory and evidence of the effects of risk aversion on political ideology. They argue that risk aversion plays a central role in shaping political ideology. They develop a political economy model that links risk aversion to political ideology via an economic channel. The authors argue that more risk-averse individuals demand more social spending to address risks, such as unemployment risk in the labour market.

A greater demand for social spending, in turn, shifts individuals' ideological location to the left in the political spectrum.

The authors use survey data to test their model. The results support the conclusion that risk aversion is strongly related, but substantively and statistically, to individuals' political-ideological position on a left-right scale. The authors find that risk aversion's effect on political ideology is at least as important as, if not more important than, a person's income.

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