Welcome

Welcome to the latest issue of Enlightenment, showcasing recent research successes within the College of Social Sciences at the University of Glasgow.

The diverse expertise of the College of Social Sciences is integral to the University’s status as one of the world’s leading research-intensive universities.

This standard is evident in our work. We use our rich knowledge across a spectrum of disciplines, including business and economy, education, environment, law and social and political sciences to consider the key research questions in the field, and produce excellent and world-changing research.

In this issue of Enlightenment, you will discover how our broad approach blends together to create local, national and international impact. A great example of this is the different regional and global considerations involved in preparing for the 2014 Commonwealth Games.

The complexity behind the social, cultural and economic challenges of today requires a collaborative approach and our Adam Smith Research Foundation promotes multidisciplinary research across and beyond the College.

As a key figure of the Scottish Enlightenment, Adam Smith was a proponent of the principles of virtue and progress for both the individual and society. We continue to build upon this proud tradition by ensuring that we respond to the current and emerging trials of society, culture and the economy.

We question, push and challenge to perpetuate our history and contribute to the debate, policy and practice that will shape our future.

Professor Anne H Anderson M.A., Ph.D., OBE
Vice-Principal & Head of College of Social Sciences

Facts & Figures

The University of Glasgow...

- was established in 1451
- is in the top 1% of the world’s universities
- is one of the highest-rated in the UK for international student satisfaction
- welcomes students from about 120 countries worldwide
- is a member of the prestigious Russell Group of leading UK research universities
- includes among its alumni, the father of economics Adam Smith, and Scotland’s architect of devolution Donald Dewar.

The College of Social Sciences...

- is comprised of 5 Schools: the Adam Smith Business School, and the Schools of Education, Interdisciplinary Studies, Law, and Social and Political Sciences.
- has more than 3,600 postgraduate students, and over 4,300 undergraduate students.
- offers over 100 postgraduate programmes.
- has over 300 academic staff involved in conducting and publishing research.
- 86% of research activity was assessed as being of international quality in the Research Assessment Exercise 2008.
- currently holds around £15m worth of research awards from UK, European and international funders, across government, industry, and the charity and private sectors.
- is home to the Adam Smith Research Foundation, which promotes interdisciplinary research across the College, and also to 12 Research Centres.
New centre will focus on the environment and culture

A new research centre based within the University’s School of Interdisciplinary Studies in Dumfries is offering valuable opportunities for researchers to learn from the distinctive environment and culture of the landscape in the south-west of Scotland and beyond.

The Solway Centre for Environment & Culture was launched in August 2012 under the direction of Dr Valentina Bold. Bringing together the interdisciplinary expertise of more than 20 staff and associate members, it focuses on three research themes:

- rural landscape management
- sustainable rural tourism
- landscape, place and memory.

Two projects are operational already. The first, funded by the Natural Environment Research Council, examines the effect of wildfires on carbon dynamics, addressing key questions for peatland fire management policy and practice.

There is ongoing debate in the UK about the relative impact of managed and wild fires on carbon emissions from peatlands. By explaining how and why alterations to climate affect fire severity, researchers aim to offer insights on how to minimise carbon losses.

The project is being led by Dr Matt Davies (School of Interdisciplinary Studies) and Professor Susan Waldron (School of Geographical & Earth Sciences).

Members of the public are being encouraged to get involved in exploring the archaeological heritage of their local area by taking part in the second project – Discovering Dumfries and Galloway’s Past.

Funded by LEADER, the Chancellor’s Fund and the Crichton Foundation, the project will encourage community volunteers in the local history and archaeological societies, schools, the council’s regional archaeologist and museum staff, as well as government agencies and the National Trust for Scotland, to collaborate in the process of archaeological exploration and evacuation, expanding upon some recent non-invasive fieldwork at Roman and medieval sites in the region.

Director Dr Bold explains: ‘We hope to use the centre as an opportunity to consolidate our research expertise and pursue new challenges. ‘Within the next five to ten years, we want the Solway Centre for Environment & Culture to play a leading role within this emerging field, working with partners among the academic community, local authorities, businesses and public bodies.’

www.glasgow.ac.uk/solwaycentre

Note: This news item first appeared in Horizons magazine in Spring 2012
The Centre for Copyright & New Business Models in the Creative Economy, run by a consortium of UK universities led by Glasgow, will examine a range of issues relating to new digital technologies with a view to meeting some of the central challenges facing the UK’s creative economy.

The UK has probably the largest creative sector in the world relative to GDP, accounting for over 6% of the overall economy and contributing around £60 billion per annum. However, building a business, cultural and regulatory infrastructure that can spark innovation, capitalise on new revenue streams and harness the potential of new and emerging technologies is a challenge that faces the sector as it aims to maintain the UK’s global leadership in this field.

CREATe (Creativity, Regulation, Enterprise & Technology) will address these and other challenges by exploring a range of issues such as those associated with digitisation, new intellectual property issues and how best to support relationships between the arts and technology.

Principal Investigator Professor Sally Wyke, from the University’s Institute of Health & Wellbeing says: ‘We know that men are less likely than women to use opportunities for lifestyle change. This project is extremely exciting and ambitious – it could be adapted for all sorts of other groups, and lead to positive lifestyle changes in men, their families and wider social networks across Europe.’

EuroFIT is funded by the European Union’s 7th Research Framework Programme and supported by leading professional football clubs including Arsenal, Benfica and FC Porto.

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Professor Martin Kretschmer of the School of Law at Glasgow is leading the consortium: ‘Working in strategic partnerships with creative businesses and cultural organisations throughout the UK, CREATe will deliver an innovative and exciting research programme that will have real impact on the creative economy as that economy continues the transition from the analogue to the digital.’

CREATe is funded by the Arts & Humanities Research Council, the Engineering & Physical Sciences Research Council and the Economic & Social Research Council.

Professor Rick Rylance is Chief Executive of the AHRC: ‘On behalf of the three research councils funding this project, and the various agencies involved in it, I’d like to welcome the launch of CREATe very warmly indeed. It represents a fantastic opportunity to take the measure of the way digital technologies are challenging existing arrangements and creating new opportunities in the UK to supply creative input. We very much look forward to seeing how CREATe develops new thinking on copyright and business potential and meets the challenges of interdisciplinary and partnership working.’
Changing views of marriage and the ‘traditional family’

A new programme of historical research into working-class marriage and marriage breakdown in Scotland aims to help improve our understanding of the nature of contemporary marriage and family structures, and to inform policy for the future.

Researchers in the School of Social and Political Sciences have recently embarked on a project which will trace the changing nature of working-class marriage, and cultural and social shifts in the nature of the relationship between husbands and wives since the Victorian era.

Prof Eleanor Gordon, who is leading the research, says: “Much has been written about the ‘traditional’ family in recent times, the assumption being that from the middle of the nineteenth century until after the Second World War, the family was a stable unit, headed by a married couple, and that the decline of marriage, the break up of the ‘traditional’ family, and the negative effects of women working, are relatively recent phenomena.”

Yet, according to Professor Gordon, the historical evidence of the past few centuries for Western Europe suggests that because of death, desertion and separation, marriages have been far from stable, the structure of the family has been fluid and complex and children frequently may have been looked after by someone other than their parents.

“A better understanding of the historical dimension of marriage will help us to interpret the present,” Professor Gordon says, “by avoiding an over-generalised view of change and continuity in marital and family relationships.”

The £780,000 study, funded by the Arts and Humanities Research Council, seeks to fill “a serious gap in the social and cultural history of Scotland, and therefore Britain”, she says.

Academic debates the place of faith in schools

Professor James Conroy, Professor of Religious and Philosophical Education took part in a major debate on the place of “Faith in Schools” in Whitehall. Other participants in the debate included Richard Dawkins, the former Charles Simonyi Professor of the Public Understanding of Science at Oxford University, and John Pritchard, Bishop of the Anglican Diocese of Oxford and Chair of the Church of England’s Board of Education.

Based on a major three year study of religious education (RE) in Britain between 2008-11, Professor Conroy argued that the failure to provide high quality religious education is both bad policy and bad ethics, and that there is a dangerous policy ambivalence about RE which goes much deeper than the activities of individual schools or teachers.

Professor Conroy said: “Good RE is about something absolutely fundamental: a space for serious, critical exploration of the meanings and values by which we live. To live good lives, individually and together, we need to be able to make sense of the world and ourselves – and RE offers the only place in the curriculum where this can still be done systematically”.

The research was based on in-depth observation and interviews in 23 schools across the UK. The researchers looked at the full spectrum of their activities, both formal and informal and involved a broad range of religious and non-religious schools in both urban and rural settings.

The researchers identified both good and bad teaching practice which had specific characteristics. The best schools for RE were not necessarily religiously denominated but were those schools that recognised the religious composition of the community they serviced and were willing to engage with them.
Healthcare in China: getting better?

Unwell, on a tight budget, and far from a medical practitioner you know. What would you do? For the first time, a research study based outside of China is exploring Chinese people’s attitudes towards their healthcare system.

When diagnosed with an illness, our thoughts tend to leap to the practicalities of recovering – arranging time off, picking up prescriptions and getting as comfortable as possible. An already unpleasant experience can be made far worse, however, if there are doubts over the quality of the medical advice available.

The commercialisation of China’s healthcare system over the last 25 to 30 years and simultaneous migration of workers from rural areas where they know their doctors, into urban environments that are more anonymous, have led some people to question the motivations of their medical professionals.

A matter of trust

Now, a project led by Professor Jane Duckett, Director of the University’s Scottish Centre for China Research, is bringing together experts from the Social & Public Health Sciences Unit at Glasgow, the University of Manchester and Peking University to conduct the first nationally representative study exploring the relationship between Chinese people’s attitudes to the healthcare system and how they use it.

‘One of the issues in China has been a mistrust of doctors, because the system has become very commercialised, with doctors selling medicines and hospitals making money out of some services,’ explains Professor Duckett. ‘There’s anecdotal research by anthropologists in China that says people will do all kinds of unexpected things if they don’t trust their doctor, such as self-diagnosing or even seeing a vet.

Talking to patients

The increasing share of household incomes and GDP being consumed by healthcare services in China has led to many studies into the impact in terms of people’s ability to pay or to travel long distances to be treated. Professor Duckett is convinced, however, that trust is just as critical a factor in how people use these services.

Professor Duckett explains: ‘The trust issue is talked about by policymakers and academics in and outside of China as an issue but no one has actually asked people in a systematic way that can confirm the extent of the problem.’

The study will be based on a nationwide survey that asks Chinese people what they think of their healthcare system, how much they trust doctors and if that affects how they use services. Without quantifiable evidence that explains this relationship, it is impossible to say why it has developed and what can be done to address it.

There has never been a better time to act. New satellite technology that measures population density will allow the team to obtain a sample of the population previously unparalleled in terms of accuracy. Traditional surveys used registers of where people lived but these did not account for the people who would leave rural areas for work without officially registering in their new urban home.

‘This new method of surveying allows us to include these migrants who would traditionally have been left out. And there are lot of them – approximately 250 million,’ says Professor Duckett.

Sharing understanding

The team hopes to use the study to aid Chinese policymakers and government advisers in shaping the future of healthcare in China. They will also work with the World Health Organization and the United Nations Development Programme to ensure their insights gathered on health behaviours are available to inform worldwide policy.

‘A lot of what happens in China is very relevant because with a fifth of the world’s population, it’s going to have an increasing influence on us,’ says Professor Duckett. ‘Any developments in its health system will have an impact on the landscape of health globally.’

‘The system has become very commercialised, with doctors selling medicines and hospitals making money out of some services.’

Professor Jane Duckett
Exploring attitudes to healthcare in China is just one of many projects in which Glasgow researchers are gathering valuable insights into a country that has become a rapidly growing global power.

Another example is an international study focusing on the relationship between social inequality and political stability in China and Russia, titled: Rising Powers: Unequal Powers, Authoritarian Powers, Unstable Powers?

Against a backdrop of growing social inequality in both countries, the team led from Glasgow by Professor of Politics Stephen White is measuring that inequality, both in itself and as local people perceive it, by engaging native experts and officials in interviews, surveys and focus groups. The research aims to place both societies against a broader comparative background.

“One of the key questions of our time,” says Professor White, “is if this model of development being shown in these nations is a viable one.

Will mounting resistance to widening inequalities lead to greater repression and perhaps ultimately a crisis of state power?”

Key partners for the project include Professor Ian McAllister from the Australian National University, Canberra, and two Russian academics – Professor Olga Kryshtanovskaya and her colleague Mikhail Korostikov from the Academy of Sciences in Moscow, who will be exploring the connections between government office-holding and private business in both countries.
Few things matter more than the ability to express our thoughts and feelings – and to have them understood. Unfortunately, when different languages come together, there are multiple ways in which this process can be compromised.

Migrants and refugees traverse multilingual environments and are vulnerable to situations where their ability to communicate is diminished. In an asylum claim, for example, if you can’t have your story understood, it may mean the difference between safety or being returned to a place of persecution.

For Professor Phipps, the lead researcher of the Translating Cultures project, which has been awarded funding of £2m from the Arts & Humanities Research Council, one of the main drivers for her research has sprung from dialogue with partners in Glasgow and around the world, such as the Scottish Refugee Council, Freedom from Torture, and the Red Cross, as well as various schools and councils.

‘Our partners were all saying languages are an issue,’ she explains. ‘We realised we needed to think deeply about translation and interpretive practices.’

Comprehension when it counts

By Steve Brown

A project led by Professor Alison Phipps from the Glasgow Refugee, Asylum & Migration Network (GRAMNet) has been awarded £2m to explore the effect that language barriers can have on people who are trying to communicate in challenging circumstances.
Seeking understanding
In order to do this, Translating Cultures is bringing together an international network of researchers and partners to work across five sites where language, translation and interpretation are critical to ensuring wellbeing and safety. The five sites chosen for the project all reflect situations where, as Professor Phipps describes it, ‘the body is at risk in some way.’

‘Issues can occur when people are in distress: so it’s in the courts, it’s when they are in trouble with the police, it’s when they are in pain, and it is at times like childbirth. At these moments, people are kind of on the edges of themselves,’ she says. ‘Our project is about improving the representation of vulnerable people who don’t speak a particular language or can’t express themselves at such critical moments.’

Battling complexity
These are complex environments to operate in. In Bulgaria and Romania, one case study will look at how border agencies cope with the changes to regulations for handling migrants and refugees required by both countries’ accession to the European Union. Here, you have EU regulations that have been translated into Romanian and Bulgarian; you may have advisors from other EU countries training these agency staff via a translator; and you then have these agency staff working with refugees and migrants who do not speak any Romanian or Bulgarian. All of this opportunity for misinterpretation can carry major consequences for people’s lives.

The researchers will also be studying their own interactions with the many languages at work within the project, including those they are learning themselves, such as Bulgarian and Arabic, and those where they are relying on interpreters.

As a result, Professor Phipps expects the project to stimulate a new framework for research – one that considers the effects of multilingualism on its practices. Just as academics consider socio-economic or post-colonial influences within their research methodologies, they also need to consider the effects of multilingualism. It has the potential to create a new field of research that will then embed across different disciplines as people start to consider these ideas.

‘Issues can occur when people are in distress.’

Professor Phipps says: ‘This is as big as asking the question: what difference does it make that I do this work as a woman, or as somebody who may not have the same skin colour as the groups that I am researching? Where we stand in the world makes a difference. So let’s ask that question of our research.’

With themes of expression permeating the project, the stories from the case studies will be shared with another partner, Pan African Arts Scotland – a performing arts group with links to the migrant and refugee community in Glasgow – who will produce their own interpretation of these stories as a performance. The idea is to broaden the dissemination of the research and deliver a wider set of outcomes.

When people have more freedom to express themselves, new insights and perspectives are possible.

www.glasgow.ac.uk/gramnet
www.glasgow.ac.uk/people/alisonphipps

To watch a video about GRAMNet’s work, go to www.glasgow.ac.uk/horizons
Living with environmental change
We learn it young: change is inevitable. Being able to adapt is a vital human skill. But what will our future world look like? Conducting research in water and on land, in carefully regulated experimental conditions on the University campus and in far-flung locations such as the Greenland ice sheet, this is the question that Glasgow academics are attempting to answer as they explore the potential causes and consequences of environmental change.

It’s clear that many kinds of environmental change can have large consequences for humans. One of the problems facing decision makers, however, is that the consequences of fluctuations observed in our oceans, lakes or even in the UK countryside can seem somewhat distant threats compared to difficulties, such as financial and domestic stability, that humans are preoccupied with on a daily basis.

One Glasgow researcher who has been keen to engage with predicting how environmental change could affect factors right on our doorstep – things like house prices and the level of employment in our cities – is Professor of Urban Studies Gwilym Pryce.

Professor Pryce was a part of the Community Resilience to Extreme Weather (CREW) project: a research partnership between 14 universities across the UK with funding of more than £1.6m from the Engineering & Physical Sciences Research Council. Mindful of the fact that many of the UK’s cities are based in coastal areas that could be vulnerable to the threat of flooding in the future, Professor Pryce led a working group within the project that investigated how flooding could affect the value of housing and the likelihood of businesses locating within a particular community.

‘The aim was to link up experts from right across the scientific spectrum with a regard to climate change,’ says Professor Pryce. ‘We were interested in trying to capture local effects because we believe such effects are more likely to inform people’s decision making. If we were to say that GDP in 50 years’ time might be 2% lower, most people are not going to be able to connect with that. If, however, we can say that in your area, climate change could make it difficult for you to find a job or it might affect the value of your house – these are the sorts of things people can identify with.’

The CREW team have presented their findings in a number of ways including at a dissemination event at the Royal Institute of Chartered Surveyors in London, and using a range of innovative online tools that allow users to draw up maps of potential hazard scenarios and explore the results.

‘Climate change could make it difficult for you to find a job or it might affect the value of your house – these are the sorts of things people can identify with.’
After 2014: Glasgow’s legacy

With preparations for the 2014 Commonwealth Games in Glasgow well under way, researchers are beginning to evaluate the legacy the event will leave the communities on the doorstep of the main venues in the city’s East End.

As part of the Scottish Government’s programme to evaluate the impact of the 2014 Commonwealth Games, and supported by NHS Health Scotland and sportscotland, a team at the University is investigating how regeneration in the East End influences the health and lifestyle of local residents.

The project uses the expertise of the GoWell research programme, a collaborative partnership between researchers from the University, the Glasgow Centre for Population Health and the Medical Research Council. Led by Ade Kearns, Glasgow Professor of Urban Studies, GoWell brings together experts in the social and health sciences to investigate if neighbourhood regeneration can bring a better quality of life to individuals.

According to Professor Kearns, the Commonwealth Games offers a unique opportunity to apply this multidisciplinary approach within the context of the kind of large-scale investment that doesn’t come along often. ‘We want to know where the East End sits within the spectrum of deprivation and disadvantage in the city and then over time if its relative position changes, given that it’s getting a lot of attention and investment, and not just in physical developments but in people-based programmes.’

As well as housing investment and neighbourhood regeneration, the event will bring...
other developments to the area. Volunteer and apprenticeship positions will give local people the chance to feel part of the event and help improve their employability. Also, new cycling, walking and bus routes will offer fresh travel options, making areas and opportunities beyond the community more accessible.

Professor Kearns hopes that all of these changes will have a positive impact on residents of these communities: ‘I’m sure there are people in the East End who probably feel that they’ve been overlooked for quite a long time and haven’t had much attention from government and policy. We’re interested to see how their thinking changes with environmental improvements and of course whether that leads through to change in other aspects of their lives.’

The core of the research is a three-part survey, which will observe how residents relate to their environment, how they feel about themselves, and their level of participation in sports and cultural activities. They will be asked questions about their circumstances, including pride of place, physical activity and health.

The first phase of this survey is now complete and the next two phases will take place in 2014 and 2016, to capture reaction during the Commonwealth Games and the related regeneration and then again when it is all over.

There will also be in-depth qualitative research conducted with groups from the communities and photographic evidence will be gathered to illustrate physical changes. ‘I’m hoping the study will enable us to say whether things have changed for people in the East End,’ says Professor Kearns, ‘whether their quality of life and their health and wellbeing is improved. We also want to be able to say by what means it improved and what things made a difference.’

The research team will be continually in touch with the organisers of Glasgow 2014 and the policymakers and practitioners implementing the regeneration throughout the study to ensure that all output is shared at a time when it may influence their decisions. The findings will give planners insight into the success of the regeneration and will affect the direction of such initiatives in the future – in Scotland and beyond.

As well as being hopeful that the project will inform future policy, Professor Kearns is confident the study will provide a notable contribution to the field. ‘There have been a lot of studies in the past about impacts of multi-sporting events but they are mostly of host cities rather than of the communities nearest the main activities, so there aren’t many studies quite like this one.’

Social impact
Kelvin Smith scholar Olesya Nedvetskaya is investigating the lasting impact the 2014 Commonwealth Games will have on certain groups of people, in particular women from low socio-economic and educational backgrounds.

‘I’m based within the School of Education and the idea of education is really important to me. It’s core to the development of a person and, without a good education, people will often find themselves socially disadvantaged, or excluded. We need to study sport-related educational programmes in cities which have previously hosted Games, in order to inform policy and practice here in Glasgow.’

Her findings will be shared with the organisers of Glasgow 2014, and should help enhance the positive social impacts and mitigate the potential negative, contributing to the lasting legacy and overall sustainability of the city of Glasgow.

• The University’s Kelvin Smith Scholarship Scheme offers postgraduate research students from around the world the chance to participate in new research collaborations involving the development of interdisciplinary research ideas.

www.glasgow.ac.uk/gowell
www.glasgow.ac.uk/kelvinsmith
A global perspective on crime and justice

Two research projects by the Scottish Centre for Crime & Justice Research focus on crime and security issues that have an international impact.

Glasgow is looking forward to the Commonwealth Games coming to the city in 2014. But alongside the talk of sport and celebration, a largely unspoken aspect of the Games is concerned with ensuring that the event is safe for competitors and spectators alike.

In a three-year project funded by the European Commission, Glasgow Professor of Criminology Michele Burman is leading a multidisciplinary team of experts who will monitor, evaluate and inform the security planning process leading up to 2014.

The project is the culmination of several years of collaboration with Strathclyde Police, says Professor Burman. 'We couldn’t do this research if we weren’t allowed access to certain security arrangements. We are looking at the ways in which the police are identifying, assessing and addressing security risks, and also at the inter-relationships between various partners that are involved in the security planning for a mega sporting event like the Commonwealth Games.'

Much contemporary security practice is based around risk assessment, which involves both identifying key risks and grading their scale and probability. But this isn’t as simple as it sounds, as Dr Simon Mackenzie explains: 'Some risks are very low in terms of likelihood but very high in terms of impact, in other words they would be very harmful were they to occur. Some risk-based security analysis is therefore about taking measures to prevent something which probably won’t happen but, if it did, would be catastrophically bad. On the other end of the scale, you have things which have a much higher probability of happening but wouldn’t be so great in terms of their harmful impact. Then you have questions as to how you allocate your limited security resources to the spectrum of perceived risk.'

To make things more complicated, much of the risk assessment is carried out in multi-agency teams, so the project will examine the interaction between these groups. 'We will be studying the way the police and other security providers work together with problem-solving partners like the fire or ambulance services, or the city council,’ explains Professor Burman. ‘Security planning involves a number of groups who have different levels of ownership over an area of risk, and we are interested in how they work together to deal with that risk in order to prevent crime and security breaches. Who takes the lead? Who has the ultimate responsibility?’

The research team also includes Glasgow Professor of Computing Science Chris Johnson, who specialises in studying systems failures, and there is close collaboration with the Scottish Institute for Police Research. The team is currently establishing international connections to gather vital background information on different approaches to security planning in other countries which have hosted sporting mega-events.

Note: This item first appeared in Horizons magazine in Autumn 2011.
Professor Burman was in South Africa earlier this year speaking to academics, as well as the police, military and private security providers who were involved in the provision of security for the 2010 FIFA World Cup. ‘Against considerable odds, South Africa is a success story. It involved a militarised security service, and a security context with significant violent crime and broader security concerns, yet the overall verdict is that security was managed well, and people who went to South Africa for the World Cup remained safe to enjoy the spectacle. There were various things that the authorities did that ensured a pleasant experience for spectators, while at the same time managing to showcase a capacity to secure a context which is generally comparatively insecure and high-crime.

‘My colleagues will be travelling to more countries this year and next to see what we can learn about the ways they have tackled issues such as border security, counter-terrorism, counterfeit ticket scams and ambush marketing during mega sporting events. A key aim of the project is to produce a legacy for security planning that will assist in the planning for future mega sporting events in Europe.’

Professor Burman is co-director of the Scottish Centre for Crime & Justice Research – an academic consortium of four Scottish universities, led by Glasgow, that has built up an impressive portfolio of research work ranging from the punishment of female offenders and youth gangs in Glasgow, to mapping organised crime. While much of the centre’s work has a Scottish focus, crime, criminal justice and security issues transcend borders, and researchers in the centre are finding their expertise is increasingly relevant in international contexts. ‘There are many criminological issues which are culturally distinct for Scotland, particularly because of the distinctiveness of Scots law and our separate criminal justice system, which creates jurisdictional issues, but which at the same time renders us intellectually interesting to an international audience,’ says Professor Burman. ‘We also have a programme of research and knowledge exchange which engages with transnational and international issues, and that acts as a counterpoint to the more localised impact activities that we do.’

This is aptly illustrated in a second project from the centre, which seeks to find solutions to combat the global trade in illicit artefacts. Each year, objects of cultural importance and significant value are looted and then smuggled around the world, often turning up in private collections and even museums in the West.

The project, which has been funded by the European Research Council, will gather and analyse data ranging from illegal excavation and pricing structures to the motives of traffickers. The aim is not only to develop new approaches to regulate the international trade of cultural goods but also to help policymakers better define laws to fight criminal activities.

Much of the problem with this trade, as with the traffic in wildlife or people, is hidden by a lack of a solid research base, as project leader Dr Simon Mackenzie explains: ‘There’s a definite dearth of evidence on some pretty fundamental aspects of this trade. Everybody knows that illicit trafficking in cultural heritage has been going on for a very long time. But it’s a very private
trade and because of that, it is difficult to record accurate statistics on the size of the problem globally.’

So where do the researchers start? At the beginning, says Dr Mackenzie. Adopting a method used by a colleague researching conflict diamonds, the team will take a multi-sited ethnographic approach; in other words they will conduct a series of observations and interviews at various points in a chosen global supply chain. ‘The ideal for research in a criminal trafficking market is to follow an object all the way through the illicit trading chain from beginning to end. We have identified a known trade route – starting in Cambodia, crossing the border into Thailand, then on to Europe and finishing either in London or New York, the world’s two centres for the antiquities trade – and we will identify key people, looters, local police, customs officials, dealers and collectors at each point, to interview for our research.’

Education plays a role in trying to combat the trade. Sometimes customs officials are unaware of the rarity of objects they come across. In one well-known case in New York, Egyptian artefacts were smuggled out of Egypt and into America by fooling customs officers into thinking they were simply tourist goods. There is also a role in educating individuals about the impact of the trade so that they don’t buy looted antiquities any more.

‘People are buying and selling cultural objects in the international market for millions of dollars and that money filters back down the chain of supply to the looters and small-time dealers in source countries. If we can stop that from happening, we will remove the incentive for stealing cultural objects and begin to unwind the criminal side of the market. So we are increasingly using an economic type of analysis in order to try to understand how to solve a criminal problem – which is not the way it’s usually done by legal analysts. The normal approach has in the past been to target criminals with domestic or international criminal laws, but our research finds difficulties with the implementation of this standard criminal law approach in a global context, and as well as improving the reach of the criminal law we are now looking for a complementary market-based approach.’

Prevention of the illicit global trade in antiquities is helped by a number of international declarations from organisations like UNESCO, but Dr Mackenzie thinks that more practical approaches are also required.

‘The United Nations Office on Drugs & Crime is currently considering the application of their Convention against Transnational Organised Crime to this particular criminal market. This contains a number of practical measures about expeditious police and judicial cooperation across borders, and using money-laundering seizures. In that regard, for example, when somebody buys a looted antiquity we might argue that the purchase price paid to the supplier is the proceeds of crime and on that basis the police might be authorised to seize the money. This is a fast-evolving field of research where new ideas are constantly emerging, so we are hopeful that we can make a major contribution to the protection of the world’s cultural heritage resources through this project.’
When 90% of the data in the world has been created in the last two years alone, it’s not surprising that the concept of big data is increasingly gaining interest in the worlds of research, government and business. And yet as a term, big data seems to defy any one clear definition. Three academics working with big data at Glasgow explain how it affects their research.

No matter which way you look at it, the volume of information now being generated by humankind is both a large opportunity and a mammoth challenge. So when it comes to data, just how big is big?

Imagine 20 million four-drawer filing cabinets filled with text. This is the same as one petabyte of data. Now consider the fact that Google processes 20 petabytes of data every 24 hours. Alternatively, think of it in terms of bytes – every day, business and consumer life creates 2.5 quintillion bytes of data.

What’s particularly exciting is that the information humans generate as a standard by-product of everyday activity (through social media, web searches and online shopping, for example) has now made it possible to take two completely unconnected pieces of data and find a correlation between them, leading to a new paradigm of research where data itself can provide findings before anyone has thought of the problem or designed the experiment. This is data-led discovery – the fourth paradigm of science – where data is no longer a few measurements taken to support an idea but a vast resource to be mined or refined for content that may not even have been envisaged when the data was collected.

A recent example was reported in the New York Times, where in 2010, web search logs showing online queries relating to a particular antidepressant and a particular cholesterol-lowering drug showed evidence that the combination of the two medications could cause high blood sugar.

Broadly, therefore, big data relates to the fact that we are able to capture, digitise, store, retrieve and interpret more of the things that go on in the world, and use this to model and predict future needs and behaviour. But big data can also be better understood through an examination of some of the Glasgow academics who build the infrastructure that enable it, create the systems that power it, or derive their insights from it.
Capturing the right data from the Large Hadron Collider

Professor David Britton

Scientists working to discover the Higgs boson needed to develop an enormous capacity to capture and process data from the Large Hadron Collider (LHC). Their solution was a massive international grid of data centres. The UK part of this computing grid is known as GridPP and Professor David Britton is the project leader.

‘Looking for the Higgs boson meant looking for something very, very hard to find in this enormous sea of data,’ he explains. ‘The way I describe it, it’s like looking for a piece of hay in a haystack. In comparison, looking for a needle in a haystack is easy in that, when you find it, at least you know you’ve found it.’

Analysing the particle collisions generated by the LHC meant working with 200 petabytes of data to get what Professor Britton describes as a ‘glimpse’ of the Higgs boson. The ongoing work to reproduce and analyse the particle in detail will generate many more times that.

‘Despite the recently announced Nobel prize for Peter Higgs, the discovery is just the start of many years of careful work to understand the detailed properties of the Higgs boson,’ he says. ‘The LHC is being upgraded and when it resumes running in 2015 it should produce many more Higgs for us to study – who knows, other new physics might also appear. The community is also discussing what might be built after the LHC in 15 or 20 years’ time, possibly an enormous linear collider. We have to keep advancing our systems to deal with the increasing amounts of data.’

Creating systems and software that can handle growing data sets

Professor Peter Triantafillou

According to Professor Peter Triantafillou, big data permeates all of our lives, from local and national government, to services such as education and health, entertainment and insurance. Working as Glasgow’s Chair of Data Systems Engineering, his group’s research can deal with any of these areas.

‘Most people, when they talk about big data, they talk about being able to analyse the data. Well, where is the data? Somebody has to store it; someone has to curate it; someone has to manage it; someone has to ensure that it’s consistent; someone has to make sure that the access to it is reliable. Your query needs to be answered within a reasonable time. And this must continue to hold whether it’s just you making a query or there are one million people making a query, and also as data sizes grow with time. So these are challenges and this is where data management people come in and help.

‘Our information needs are always changing and they only pertain to a tiny amount of any massive dataset. My research tries to make sure that data can answer all the queries of the user community in an efficient manner. Datasets grow with time and the user community grows with time. I build systems that will scale to accommodate that.’

The findings extracted from data are only dependable when the systems and software developed to extract these findings can be trusted. For this reason, Professor Triantafillou uses open access to distribute the software his group creates in their research. Where their published results state that they have made major improvements in the speed that information is retrieved, the group provides the software for others to verify these findings independently.

Using data to understand and positively influence behaviour

Professor Vonu Thakuriah

This year, Professor Vonu Thakuriah has made the move from the University of Illinois, Chicago to occupy Glasgow’s Halcrow Chair of Transportation. She uses big data to understand cities, with the aim of improving them. Currently, a key focus is around transportation systems and the way that they can positively influence social mobility, health and sustainability.

Cities are laden with vast amounts of real-time sensors that generate huge amounts of data about the movement of people – as pedestrians, in vehicles and on public transport. People also generate huge amounts of data about transportation themselves, through social media and smartphones.

‘What I have done for a long time in my research has been to mine such data to understand traffic patterns,’ explains Professor Thakuriah, ‘and then give forecasts to people of how much congestion they could expect or when a particular bus is going to arrive at the bus stop and so on. There are a lot of urban modelling simulation and mathematical modelling simulation tools that we use in order to do this kind of research. Another aspect of my research is how big data transforms or has the potential to change human behaviour.’

Professor Thakuriah has recently published a book called Transportation and Information: Trends and Technology and Policy, in which she has laid out hypotheses about how to transform transportation in ways that can bring about positive outcomes for people. She hopes to put these theories to the test as a member of the Glasgow Future City Demonstrator Evaluation Strategy Board.

‘I am working with them on an active travel project where I show them how this kind of data can help develop strategies to encourage people to do more bicycling and walking,’ she says.

To explore the research of each of these academics further, see www.glasgow.ac.uk/horizons
Investing in society

Working from the lab bench to the patient bed, our experts have long striven to discover ways of improving the health of Glasgow, Scotland and beyond. Now, with the establishment of a Research Institute of Health & Wellbeing at Glasgow, academics and clinicians, scientists and social scientists, patients and policymakers are finding new ways to communicate in order to reach a common goal: ensuring that the health and wellbeing of future generations is better than the one before.

‘I’d rather interact with people than with test tubes … but it’s important to work with researchers who are interested in lab work too.’ Glasgow Professor Sally-Ann Cooper is talking about her passion for conducting research that can help to reduce inequalities in health. An expert in learning disabilities, she’s a psychiatrist and a member of the University’s Centre for Population & Health Sciences based at Gartnavel Royal Hospital.

‘People with learning disabilities are one of the most disadvantaged groups in society,’ she explains, ‘and that’s just not right. I want to reduce the inequality that they currently experience and improve their mental health. This means that I like to conduct applied research because it makes a difference in people’s lives. I’m a clinical academic, so while the work that I do does involve large databases and a certain degree of number crunching, we also do qualitative interviewing; it’s definitely interacting with people.’

One project that Professor Cooper is currently involved with is exploring whether there could be benefits in offering health checks to those with learning difficulties as standard. ‘We know that people with learning disabilities consult their GPs and practice nurses much less often than everyone else, even though they have higher levels of health needs. What tends to happen is that any problems go undetected and unmanaged. They only present themselves much later, and by this time, they can have multiple complications. We’re trying to see if there are ways to reduce that,’ she says.

‘That’s my own personal research,’ Professor Cooper continues, ‘but we have many other researchers in the Centre for Population & Health Sciences who are looking at factors that affect a large chunk of society, because we’re interested in improving the health of our population as a whole, which also includes investigating ways of tackling the “big killers” – problems like cardiovascular and respiratory disease.’ Professor Jill Pell, for example, has recently completed important research that has evaluated the impact of the introduction of the ban on smoking in enclosed public places in Scotland. ‘That, of course, is of a benefit, potentially, to all of us,’ says Professor Cooper. ‘We’re also interested in working with our colleagues in social sciences, like Professor Nick Watson, whose research is in disability studies.’

Professor Watson is Director of the Strathclyde Centre for Disability Research, which was set up at the University following a bequest from the former Strathclyde Regional Council. Today the centre is home to a range of research and teaching projects, and is responsible for eight PhD students. Professor Watson explains: ‘We work closely with organisations of and for disabled people, and we see our work as looking to present evidence about the barriers they face. Rather than looking at disability as a problem of the individual, we focus on the

With the creation of a Research Institute of Health & Wellbeing, it seems that new collaborations, opportunities and partnerships aimed at reducing inequality and improving health in Scotland and beyond are on the horizon.
problems that disabled people contend with when they try to access society.’

One project, involving sociologist Dr Kevin Paterson, is exploring what it’s like to grow old with cerebral palsy. ‘When people talk about disability and old age, and this demographic time bomb we’re facing, mostly they’re thinking about people who acquire a disability as a result of growing old,’ Professor Watson says. ‘But because of improved medical techniques, and also because people with disabilities no longer live in long-stay institutions, there is a new cohort who are ageing in the community. They have distinct care needs that are associated with the normal patterns of ageing that everyone experiences, but also they have other issues to do with the impact of ageing with cerebral palsy.’

It’s a common approach, Professor Watson says, for disability to be thought of exclusively as a childhood issue, something which is very much not the case. And given the current economic climate, it’s a difficult time to be calling for more support and more care. ‘It’s estimated that £9.4 billion is going to be taken out of support for disabled people as part of the Comprehensive Spending Review,’ he says, ‘and we’re also finding that media representation of disabled people is currently shifting – the language being used is changing to words like “burden”, as opposed to “citizen”, for example.’

Against this backdrop, Professor Watson and Dr Jo Ferrie have been working with Capability Scotland and Margaret Blackwood Housing to prepare a report about the removal of the mobility element of the living disability allowance from people who live in care homes. This was taken to the Scottish Parliament in March 2012, to help to provide a response to the second reading of the Welfare Report Bill. ‘We’re always looking to conduct sociological research and do work that is directly applicable to people’s lives and will have impact,’ explains Professor Watson.

‘There is no other centre like this in Scotland, so we have a unique role to play. We offer teaching in disability studies at Masters level, and our PhD students are conducting a range of research, from exploring what it’s like for disabled people living in Malaysia to discovering the impact of anti-discrimination legislation on young disabled people in the UK.’

www.glasgow.ac.uk/healthwellbeing
Researchers at Glasgow are investigating the benefits of providing internet access to farmers in rural India.

The teeming city of Bangalore in the state of Karnataka, south-west India, is well known as a hub for India’s ICT (information and communications technology) sector. However, this is in stark contrast with the rest of the state, which is predominantly rural, with people having little or no access to ICT. India’s development priorities include poverty reduction and faster, more inclusive growth, and there is growing concern that poor people, especially in rural India, have benefited very little from rapid economic growth.

Dr Arjunan Subramanian, an economist in the University’s Adam Smith Business School, has been awarded more than £430,000 from the Economic & Social Research Council and the Department for International Development for a three-year study to look at the role ICT could play in improving rural welfare in India.

Working with Professor Gopal Naik from the Indian Institute of Management in Bangalore, Dr Subramanian plans to set up televisions and computers with broadband access in a number of villages with crop growth

Agricultural workers carry out the post-harvesting jobs along the roadside
The information will include weather reports, the type of crop and seeds that would be beneficial to grow, and when and how much fertiliser or pesticide to use. According to Dr Subramanian, credit is perhaps the biggest problem for poor farmers. ‘There isn’t much information about where you can get credit from, so the farmers end up using the moneylender in the village and the money that they borrow doubles in six months to a year, as the percentage of the interest is incredibly high and it’s difficult for them to repay. On the other hand, you have the commercial banking system but there is a lot of bureaucracy to access credit. So, we can provide the information and then we facilitate things for them so that they can borrow from there in the future.’

Dr Subramanian intends to involve the farmers in the design of the study by holding discussions with them to find out what information will best suit their needs. He also plans to engage women in this discussion: ‘Society structure says that women have no say in the decision making in the households. But, if you look at the monetary distribution within the household it is clear that the say of women is really important. There are several research pieces that show that if more money within the household is allocated to women, the health and educational outcomes of children in those households are better. This is because women take better care in spending the money on children, while men spend on themselves in alcohol and tobacco consumption. So, we want to hear women’s voices.’

Equally, the caste system continues to play a significant role in Indian culture but specifically in facilitating economic activity. Dr Subramanian thinks that economic inequalities between castes may also be notable in their access to information. However, there is potential for ICT to impact positively in dismantling these inequalities by providing information that will create markets and introduce competition. ‘In rural areas, you can find caste clusters. Some villages have upper caste people together and then just outside the village there is another cluster of lower caste people. The lower caste people are not allowed to enter the village and they can’t enter the temple, they can’t take water from the hand pump, so they have a separate one which is far away from the village. So, even if you are providing information to the farmers, this information may not be accessible to them just because they belong to the lower caste. We want to see if these castes are allowed to come and take the information and it may depend on where we set them up. So, if we set it up in the main village, obviously they can’t enter the village. So, we have to set it up in such a way as to find a place that suits all.’

The study will use action research techniques – the process of actively participating in social action while conducting research. Dr Subramanian explains: ‘The study is a randomised control study, which you see a lot in the health field when they are developing new medicine. We will randomly assign ICT to some villages and not others and will then compare the difference in agricultural practices and productivity, and household incomes, between the two groups. Randomisation ensures that the only difference between households in the two groups is the greater access to information from ICT, which means that you can clearly see the cause and effect from the action that we are taking.

“Our aims are to unravel the linkage between information access and agricultural growth, rural development, reduction of poverty, and income and social inequality; and to identify the role of ICT as a potential instrument of rural information and empowerment for inclusive growth.”
Leading figure of Scottish Enlightenment Adam Smith (1723-1790) is closely associated with the University of Glasgow, where he studied and later held a professorship in moral philosophy. The College of Social Sciences is committed to honouring and building on the academic tradition of Smith, whose pioneering interdisciplinary approach encompassed much of what today are thought of as ‘the social sciences’.

Best known as the father of modern economics, Smith was a holistic thinker. According to Professor Chris Berry, Emeritus Professor of Political Theory at Glasgow, "the economic component of his vision is only one of many… he was also a subtle and significant philosopher, an informed and sophisticated historian, an attentive and insightful sociologist, and a perceptive analyst of culture".

His book *A Theory of Moral Sentiments* was written and published while Smith was teaching at the University of Glasgow, and, alongside *The Wealth of Nations* (which has its origins in his Glasgow lectures), is one of the most influential books of the age.