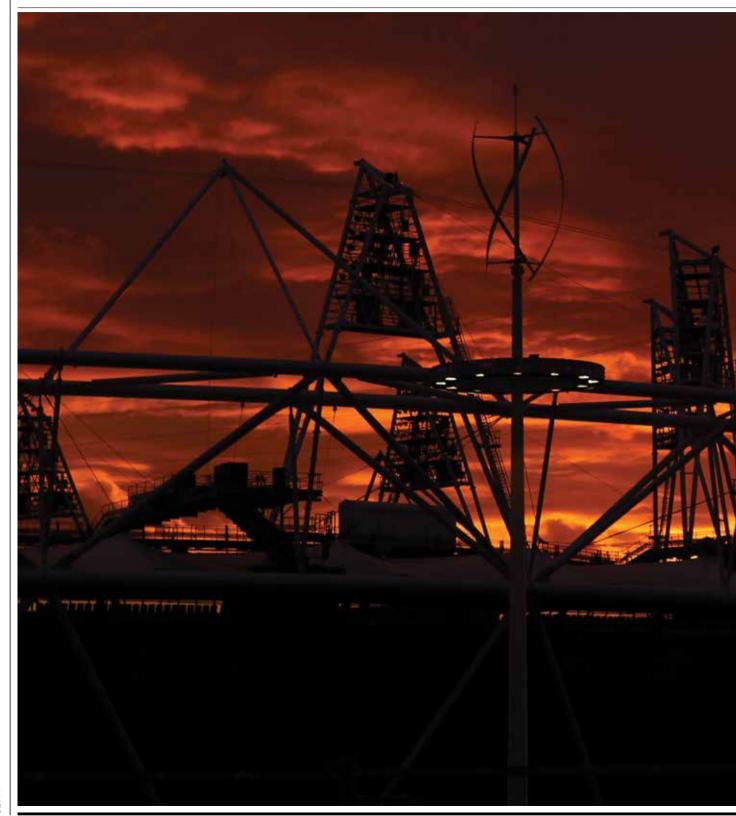
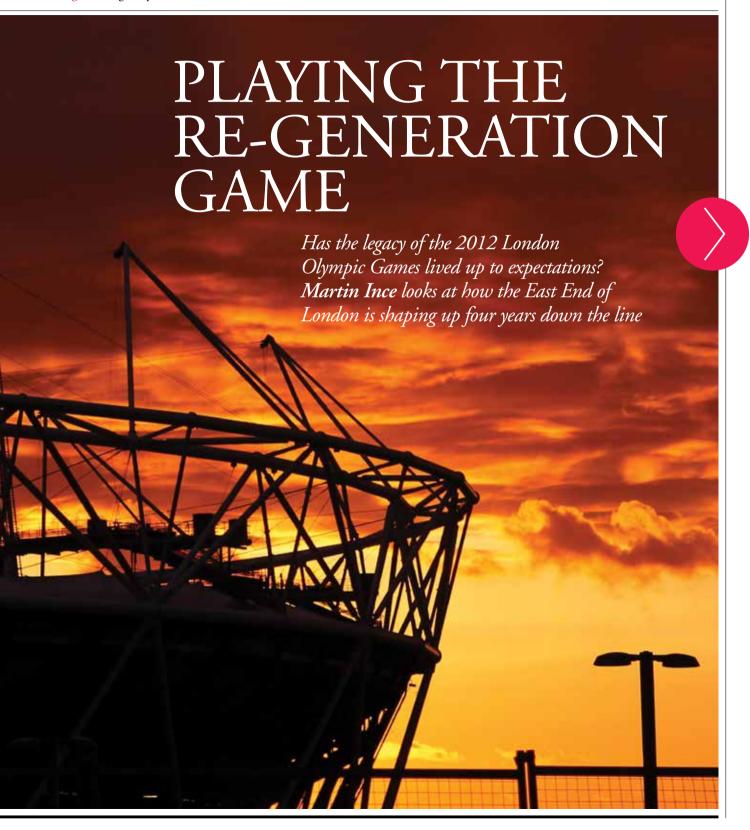
# CULTURE, MEDIA & SPORT



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### PLAYING THE RE-GENERATION GAME

s professor of geo-information at the University of East London, Allan Brimicombe had a close-up view of the preparation, delivery and aftermath of the 2012 Olympic and Paralympic games. But his interest is not merely that of a curious neighbour. Instead, with the support of the ESRC and others, he has been answering the knotty question of whether the Games have had a lasting

The Vancouver Winter Olympics of 2010 and the London Games of 2012 were the first to have their impact and legacy consciously measured. Experience gained from these two very different games has led to the creation of an International Organization for Standardization (ISO) global standard for sustainable events that can be applied to anything from Formula 1 to the football World Cup.

transformative effect on the East End of London.

Professor Brimicombe says that the London Games have had a permanent effect on the International Olympic Committee's (IOC) view of legacy. He explains: "The IOC needs some good legacy stories to tell as it tracks the effects of future games. London is one such good story in many ways. For example, there are no big white elephant stadiums left over and not in use." But the real lesson of London 2012 is that legacy is about working with existing thinking, not cutting across it. Putting the Games in East London meant that they could produce a legacy consistent with established plans to regenerate the area. Brimicombe says: "Olympic candidate cities now have to show that they are planning a sustainable legacy that chimes with the city's existing ambitions and aspirations."

#### SPECIAL EVENTS

Brimicombe sees London 2012 as a 'mega-event'. This is a special category of event, which is big enough to have a transformative effect on the city in which it takes place. "Another example," he says, "was Liverpool becoming the European City of Culture in 2008. That was a mega-event for Liverpool but would not have counted for a city on the scale of London. Because these events offer scope for the genuine transformation of a major city, it is essential to think carefully in advance about the type of change the organisers are going for and how the event can catalyse it."

This approach is now standard. For example, organisers are required to show that they have minimised the climate change effect of the event they are proposing, and that they have organisational, governance and financial structures in place for the period of the event itself and beyond.

This approach is known in IOC circles as 'additionality', the idea that the Olympics can make it quicker and simpler for a city to achieve its existing aims. Brimicombe points to the example of transport in East London. The Olympics meant that the Docklands Light Railway got a new line, the London Overground was revamped and the Underground refurbished. "The IOC said in an early report that the Underground was 'obsolete',



Stadium legacy Building the Olympic Stadium in Stratford has accelerated the programme for regeneration in the East End of London

and that stung Transport for London a lot. As a result, about £6.5 billion of investment took place that would otherwise have taken a decade longer to complete."

While his research does not include formal economic analysis, Brimicombe is sure that this spending will have brought a substantial economic benefit to London and to the UK as a whole. But this example illustrates a more general problem with measuring legacy. As he puts it: "You can only measure the legacy against a counterfactual idea of what would have happened without the Games, and a city such as London changes all the time."

#### **CHANGING THE FUTURE**

The baseline for the 2012 Olympic legacy is the government ambition for the people of East London to have the same social and economic chances as the other inhabitants of London by the year 2030. The immense affluence of some areas of London makes this a big ask. Brimicombe sees the Olympics and Paralympics as an opportunity for "step change" progress in this quest. But he adds that this moving target is a problematic one.

"If obesity and coronary heart disease increase across London," he points out, "the East End could match the average by staying in the same place."

In fact, a range of indicators suggest mixed results for this catch-up ambition. The unemployment gap between East London and the rest of the capital has widened for young people. For school students in Year 6 (about 11 years old), the same is true of obesity. In terms of housing, levels of overcrowding have also worsened relative to the rest of London. But there is good news as well. Educational achievement in terms of the percentage of students getting five A-C Grades in their GCSE exam, the standard measure of school-leaver attainment, is on track to converge with the rest of London within the 2030 timeframe. There is less crime, including violent crime, although this trend is also in evidence across London, and indeed Europe as a whole.

But the Olympics and Paralympics are about sporting prowess, and the most obvious long-term ambition for the Games was to grow sporting participation and healthy living in East London.

Professor Brimicombe says: "Both Tessa Jowell (the former government minister in charge of winning the Olympic bid) and the House of Lords, which has reported on Olympic legacy, say that this is a key part of the legacy that has not been a success. The reason is that even heavy investment in sports participation needs followOpen for business The BMX track at the Lee Valley Velopark, a former cycling track at the 2012 Games, opened for public use in March 2014



up investment if it is to take root." The House of Lords pointed out, for example, that growing school sport will require more specialist sports teachers in primary schools.

Part of the problem may be that participation in full-scale sport fails to interest large parts of the population, who, as Brimicombe puts it, may have bad memories of the idea from their school days. It might be better to concentrate on healthy and active lifestyles, perhaps involving more cycling to the shops, or using the stairs rather than the lift, than to expect elite sport to trickle down to the rest of us.

Brimicombe says: "There has been funding for specialist sport teachers, but it is not ring-fenced and there is no government minister whose job it is to secure Olympic legacy. Government spending austerity means that individual departments look to safeguard their resources. This works against the co-operative approach required for a successful legacy." He adds that this low level of longer-term co-operation is a common pattern. It has been seen after several Olympics, with the notable exception of the 2008 Beijing Olympics. He points to the example of volunteering. "The UK was praised around the world for its friendliness after the Games, in part because of the volunteering that took place. That could have led to a national volunteer clearing house, but the momentum was lost.'

On the other hand, Brimicombe believes that the showpiece Olympic Stadium has a better long-term future than many of its predecessors. It will house West Ham United Football Club from September 2016, and has been redesigned with moveable seating to allow athletics, music and many other events to be held there. He says: "The stadium is a national asset, comparable to Wembley Stadium or the Millennium Stadium in Cardiff. It should be in regular use for a range of activities."

www.olympic.org/content/olympism-in-action/olympiclegacy/london-2012-legacy



A week in the online life of Katie Hopkins: Is falling silent a way of calming a Twitter storm?

**OPINION** 

### COURTING CONTROVERSY

By Dr Claire Hardaker

COMPETITION IN THE changing world of mass media has never been higher. With so many channels, papers, magazines, blogs and stations all vying for our attention, getting a good slice of the ratings has never been so hard. But for those who are not selective about the type of attention they are willing to elicit, there is a shortcut: become a trollumnist – a columnist who trolls.

One figure who has been described as a trollumnist is Katie Hopkins, who rose to fame in 2007 after appearing on *The Apprentice*. Hopkins regularly writes for the *Sun*, and joined Twitter (@KTHopkins) in February 2009. Since then, she has tweeted, on average, once per waking hour, every single day for the past six-and-a-half years. In that time, she has broadcast many deeply unpopular opinions, mocked countless critics, and attacked several celebrities.

On Sunday 12 April 2015, around 400 illegal immigrants died when their boat capsized off the Libyan coast. Five days later, on Friday 17 April, Hopkins' column in the *Sun* described migrants as feral humans and cockroaches, likened them to a virus, and advocated the use of gunboats to sink migrant ships.

The article prompted widespread condemnation. The UN's High Commissioner for Human Rights likened it to language found in pro-genocide propaganda and, months later, during an investigation into allegations of incitement of racial hatred, Hopkins was questioned under caution about the article by the Metropolitan Police's Homicide and Major Crime Command. The anger at Hopkins' column was further inflamed when another migrant boat capsized on 19 April, killing 700 more men, women and children.

As news of the second boat's fate spread, Hopkins' usual stream of tweets abruptly stopped and did not resume until 6am on In the evolving world of new media, it can therefore pay to be a troll



Friday 24 April, almost five full days later. Why? What happens to someone like Katie Hopkins on Twitter when they air views that inspire such strong feelings?

#### TWITTER HOLIDAY

Using software developed at the ESRC Centre for Corpus Approaches to Social Science to analyse just over 150,000 tweets covering Friday 18 to Sunday 26 April, we found three striking themes in the tweets sent directly to her: death, ugliness and dislike. The first is mainly about the migrants, whose deaths are described not just as drownings, but also as genocide and murder. The second and third are primarily assessments of Hopkins. From 18 April onwards, she receives literally

thousands of tweets per day, peaking at over 5,000 on 21 April (about one every 20 seconds) telling her that she is disgusting, nasty, repulsive, filthy, hateful and hated, and these are merely the publishable descriptions. Was Hopkins stunned into silence by it? Or was there more to her sudden Twitter holiday?

Interestingly, as Hopkins' Twitter absence progresses, the avalanche of rage gradually slows. On the one hand, this is partly due to the mayfly lifecycle of online outrages. They explode spectacularly and die as a new story grabs the headlines. On the other hand, like tennis, it is tedious to play against an opponent who will not hit back and few people have the stamina to keep firing tweets into an unresponsive abyss day after day.

Counter to common intuition, silence is a powerful way of quelling online storms of this nature. Perhaps most intriguing of all is that while Hopkins' article might have stirred up wrath, and her silence may have calmed it, neither stopped her from gaining just under 500 followers per day. In other words, the backlash that most of us would dread guarantees that Hopkins remains a person whose controversial opinions will drag in audiences and clicks. In the evolving world of new media, it can therefore pay to be a troll.

www.youtube.com/ watch?t=3&v=TGqSLPnniZ4

**Dr Claire Hardaker** is a Lecturer in Linguistics and English Language at Lancaster University.

#### **SOCIAL MEDIA**

# NVESTIGATING NVECTIVE

Social science analysis of tweets detects patterns of anti-Semitism to better direct resources to combat it



IT IS NOW WELL KNOWN that each time there is an upsurge in the Israel-Palestine conflict there is a rise in violence against Jews around the world. So it was in 2014 with Israel's 'Operation Protective Edge' military action. According to the Tel Aviv University Kantor Centre Anti-Semitism Worldwide 2014 report, it was one of the worst years on record for anti-Semitic incidents globally.

With the growth of social media, an apparent upsurge of anti-Jewish abuse on social media networks such as Facebook and Twitter was also noticeable.

Insults against Jews are frequently hurled on the streets and other public places. But the sentiments expressed by offenders have not usually been accessible to researchers because of the fleeting nature of their occurrence. Insults slung on social media, by contrast, are preserved for scrutiny.

Criminologists at Lancaster University working in the ESRC Centre for Corpus Approaches to Social Science undertook

Some tweets contained anti-Jewish invective, which, if shouted on amount to criminal offences

the streets, would

an analysis of tweets sent during the Gaza conflict that took place in July and August 2014. They were commissioned to provide a rapid response analysis to inform the 2015 report of the All-Party Parliamentary Inquiry into Anti-Semitism.

Working with many millions of tweets, they carried out a detailed analysis, using the core techniques of corpus linguistics computer-aided linguistic analysis - on a sub-sample of 38,460 tweets containing the words 'Israel' or 'Gaza', along with the words 'Jew', 'Jews' or 'Jewish'. The results from the studying selection were telling.

One technique from corpus linguistics is keyword analysis - looking for words with unusually high frequencies. In this data, a keyword approach showed the spectre of Nazism looming large in the data, with words such as 'Hitler', 'Holocaust', 'Nazi' and 'Nazis' in the top keywords.

#### **NEGATIVE SENTIMENTS**

Unlike other approaches to the analysis of social media data, which rely largely on automated techniques, the corpus linguistics approach blends expert human analysis and computer-assisted analysis because the linguistic contexts in which keywords and hashtags are located matter.

By exploring the data in this way we better understand the highly negative sentiments of the tweets. Some tweets contained explicit anti-Jewish invective, which, if shouted out on the streets, would clearly amount to criminal offences. Some wished violence upon Jews as proxies for Israelis, or simply just as Jews. Some expressed the sentiment that 'Hitler should have finished the job'. Shockingly, the use of gas chambers on Jews was invoked.

The impact of the analysis was underlined by the Report of the All-Party Parliamentary Inquiry into Anti-Semitism. It stated that the 'importance of this research should not be underestimated. It helps identify some of the themes in discourse and, with time, could help to detect patterns of anti-Semitism and therefore better direct resources to combat it.' It also called for further research, which is being undertaken by the Lancaster University team.

cass.lancs.ac.uk

## SURVEILLANCE SOCIETY

In digital environments, how do pervasive monitoring and data collection affect our civil rights?

 ↑ he revelations by whistleblower Edward Snowden, which have been published in the Guardian and other media since June 2013, have radically transformed our understanding of not only the internet but a wide range of social and political concerns. Most immediately, the leaks about contemporary mass surveillance have proven that all our communication and other activities on the internet are monitored, stored and analysed. Detailed information about programmes such as Prism, Tempora and Quantum, and analytical tools such as Xkeyscore, has demonstrated how exactly and to what extent states collect our data, intervene into communication infrastructure and monitor our behaviour.

Perhaps even more significantly, the leaks have prompted debates on the nature of civil rights in digital environments and the role of the security state. While government officials have pointed to a necessary 'balance' between rights and security, civil society organisations and international institutions such as the UN have argued that restrictions to key human rights, such as the right to freedom of expression, in light of mass surveillance are dangerous for democracy.

A range of independent commissions and reviews, such as the Investigatory Powers

Review headed by David Anderson in the UK, have criticised current surveillance practices and have demanded changes to legislative frameworks. Such changes have started to emerge, particularly in the United States where the recent US Freedom Act was, according to Snowden's lawyer Ben Wizner (speaking at a conference at Cardiff University), "the first time since 1978 that the US Congress has restricted, rather than expanded, the surveillance authority of the intelligence community".

Beyond citizen concerns and national politics, the leaks have affected both international and state-corporate relations. Responding to customer concerns, internet companies such as Google, Apple and Facebook have had to strengthen their users' privacy and security, and to distance themselves to some degree from the previously close collaborations with state agencies. Widespread spying on other governments, as revealed by Snowden, has led to geopolitical frictions and to harsh criticisms of the US and UK governments, for example by the President of Brazil.

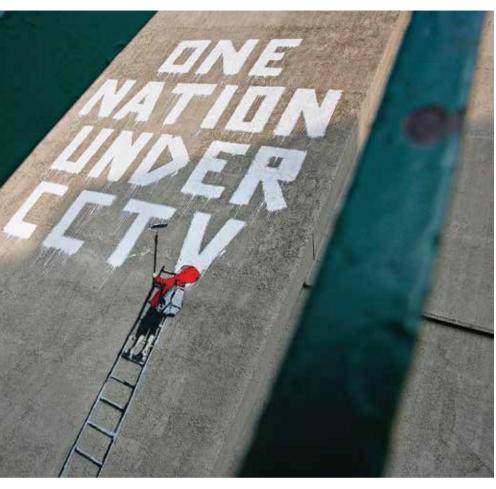
In this historical context, the ESRC-funded project Digital Citizenship and Surveillance Society was set up to explore the implications of mass surveillance and the Snowden leaks.



Hosted by Cardiff University and bringing together five investigators and four research assistants, the project has applied a range of research methods, including expert interviews, focus groups, policy and technology analysis, and media content analysis, to understand the effects of the leaks for policy, technology, civil society and news media. It has investigated the gaps of the regulatory environment of surveillance, the vulnerability of technological infrastructure, public awareness and activist responses, and the media coverage of surveillance.

While the research is still ongoing, several findings are emerging that point to significant challenges and opportunities for digital citizenship in the 'Snowden Era'. A common feature reflected in much of the research is the invisibility of digital surveillance. Whereas, for example, CCTV cameras are visible in public space, online monitoring is hidden from the public eye and its practices and regulatory limits remain nebulous.

This lack of transparency has caused significant concern among the British public but, at the same time, also a powerlessness regarding appropriate responses. The omnipresence of surveillance leads to disillusioned public





#### WHISTLEBLOWERS

Some of history's most famous leaks

#### Sean Hoare

The former News of the World showbusiness reporter was the first named journalist to allege that Andy Coulson was aware of phone hacking by his staff.

#### Sherron Watkins

Watkins' internal memo about accounting irregularities at Enron proved that executives knew of illegal activities, helping lead to the energy giant's downfall in 2001.

#### Serpico

This New York City police officer confronted corruption within the police department in 1971. Al Pacino (right) played him in the 1973 movie Serpico.

#### Karen Silkwood

The American chemical technician and labour union activist raised concerns about corporate practices related to health and safety of workers in a nuclear facility. She was played by Meryl Streep in the 1983 film Silkwood.

#### David Shayler

The British journalist and a former MI5 officer passed secret documents to the Mail on Sunday alleging that MI5 was paranoid about socialists and had investigated various Labour ministers.

#### Daniel Ellsberg

While working at the US State Department Ellsberg leaked the Pentagon Papers, revealing how the US public had been misled about the Vietnam War.

#### Julian Assange

The founder of WikiLeaks in 2006, a site which published classified and secret information from sources around the world, including details of US army activities at Guantanamo Bay.

#### W Mark Felt

Also known as 'Deep Throat', this associate director at the FBI leaked information about Watergate to Washington Post reporters Bob Woodward and Carl Bernstein in the 1970s, leading to the downfall of the Nixon presidency. expectations of persistent surveillance. This 'surveillance realism' thus combines critical awareness with weary acceptance of this new reality and points to the chilling effect of surveillance that has been observed consistently in other research.

The news media, according to our findings, has not helped to clarify the matter. While some publications have informed about a range of Snowden leaks, the vast majority have focused on a few instances in which world leaders and members of political elites were targeted, whereas mass surveillance of normal citizens went relatively uncovered. In that way, media have contributed to a public debate, which has prioritised the rights of the state and the need for (state) security over the rights of citizens and their (human) security.

Preliminary research results were presented at the international conference Surveillance and Citizenship, which was organised by the project investigators and held in Cardiff in June 2015. Currently the research is being concluded, and over the coming year several publications will present the findings and discuss their implications for digital citizenship.

#### www.dcssproject.net

The project is led by the following investigators: Dr Arne Hintz, Dr Lina Dencik, Prof Karin Wahl-Jorgensen (all Cardiff University), Prof Ian Brown (Oxford University) and Dr Michael Rogers (Technical University Delft). Research is also conducted by Research Associate Dr Jonathan Cable and Research Assistants Dr Grace Eden, Dr Lucy Bennett (all Cardiff University) and Dr Josh Cowls (Oxford University).



IT IS A DECADE since four men became human bombs on the London transport network, killing 52 people. The UK's national security apparatus has been significantly revised through new laws, strategies and investment, but we have become accustomed to terrorist threats and counter-terrorist operations occurring in different towns and cities across the country. Following the attacks on *Charlie Hebdo* 

#### **DIPUBLIC BEHAVIOUR**

## Terror tactics

### Reactions to terrorist attacks and managing the consequences

magazine in Paris, the head of the security service warned future terrorist successes are likely – an assessment echoed by the Commissioner of the Metropolitan Police.

Reflecting wider geo-political events, it seems that a decade on from 7/7, how to manage the risks and consequences of

terrorism is going to be an ongoing security challenge and social problem for Britain. Responding to this situation, over the past 10 years there has been a significant increase in social scientific research on terrorism. But one neglected issue is how to effectively manage the consequences of attacks when they do happen – a real gap in our

knowledge given the recent comments from the heads of the security service and police.

This is an issue addressed by the 'After Woolwich' project, which has tracked and traced social reactions to the 'signal crime' terrorist murder of Lee Rigby in Woolwich in 2013. By analysing social media data the study derived a 'high resolution' picture of the social reaction processes and conflict dynamics that occurred after this atrocity.

It has identified seven specific behaviours (reporting; requesting; responding; retaliating; rumouring; reheating; resiliencing) performed by members of the public that collectively

shaped the tenor and tone of social reactions to this crime.

Providing detailed evidence of how the public reacts in the aftermath of terrorist attacks has direct policy implications for the UK's CONTEST Strategy, currently organised around 'the four Ps' of Prepare, Protect, Prevent and Pursue. The 'After Woolwich'

analysis shows CONTEST would benefit from a fifth 'P' focused upon 'post-incident consequence management'. After all, if we can't prevent all future terrorist attacks, we can minimise their negative impacts for society.

bjc.oxfordjournals.org

investment

The UK's national

security apparatus

has been revised

through new laws,

strategies and

**JUSTICE** 

### Driven by data Social media can inform

Social media can inform crime and justice policy



RESEARCHERS AT CARDIFF University's Social Data Science Lab have been studying how Big Social Data can be used to help inform operational and policy decisions in the area of crime and security. Funds from various ESRC programmes including Digital Social Research, Google Data Analytics, Global Uncertainties and National Centre for Research Methods, have enabled the researchers to detect online racial tension following sporting events, model the propagation of cyberhate following a terrorist attack, and estimate crime patterns with social media communications.

Dr Matthew Williams, Director of the Lab, said: "It is now becoming possible to repurpose social media data to address substantive questions about social processes and mechanisms that preoccupy social scientists and policymakers. For example, we are embedding our theory-driven big data analytics within the Metropolitan

Police Service and we are working with Community Security Trust on combating anti-Semitism on social media." Recent high-profile failures of big data, such as the inability to predict the US housing bubble in 2008 and the spread of influenza across the US using Google search terms, have resulted in many questioning the utility of these new forms of data for government.

#### REALITY CHECK

Dr Pete Burnap, Director of the Lab and computational lead, commented: "The default approach in big data research seems to have been wholly data driven in the effort to predict. But this approach tends to produce models that are over-fit to the idiosyncrasies of a particular data set, leading to spurious results that don't reflect reality. So we have put in place a series of strict checks, such as augmenting big data with conventional sources and using theory to drive our analytical process."

www.cardiff.ac.uk/news/view/131898-detecting-crime-using-social-media



**CELEBRITY** 

### STAR POWER

### How social media reacted to Emma Watson's call to action

Within 24 hours of

**Emma Watson's** 

speech, the hashtag

#HeForShe was

trending on Twitter

THE POWER AND INFLUENCE of celebrities is extensive. Companies have long jostled for the endorsement of those in the public eye; the same can more recently be said of political parties, charities and not-for-profit organisations. When UN Women recently launched a new campaign, HeForShe, dedicated to achieving global gender equality, it is perhaps unsurprising that they looked towards celebrities for support. And

Emma Watson, appointed UN Women Goodwill Ambassador, gave an emotional speech at the official launch of the campaign. She then took to Twitter, encouraging other celebrities to show

the celebrities delivered.

support. A response from One Direction's Harry Styles quickly gained 340,000 retweets and 480,000 favourites. Within 24 hours of Watson's speech, the hashtag #HeForShe was trending on Twitter, and around the world people were discussing the campaign.

Linguists based at the Corpus Approaches to Social Science (CASS) research centre at Lancaster University are investigating how current events are discussed on social media. To consider views on the HeForShe campaign, they analysed a sample of tweets containing the hashtag #HeForShe.

It is clear that Watson's endorsement benefited the campaign. She certainly got people talking, as many of the tweets mention her by name. The vast majority of tweets evaluate her positively, for instance common

labels for her were 'inspiring', 'empowering' and 'kick-ass'. But very few of the tweets discuss ways in which Watson could help achieve gender equality; her involvement in the campaign appears to be viewed positively simply because she is a celebrity.

This suggests that

the impact of Watson's support could be extended further still. For example, Watson could use Twitter to show examples of how she is trying to achieve gender equality; rather than achieving general support for the campaign, this may ensure the public follow her lead.

cass.lancs.ac.uk

# NEWS IN

#### **DIGITAL BOURNEMOUTH**

Digital innovation goes far beyond London's Silicon Roundabout, According to the Tech Nation report, Bournemouth is the fastest-growing city in UK's digital economy. Digital and advertising companies are being based in the city more and more, followed by an emerging community of app development agencies. The ESRC-funded Bournemouth Digital Pier feasibility study (2013) pointed out how the area met a number of criteria that the research identifies as critical for development as a digital hub, and argued that few other cities in the UK were better placed to develop their digital industries. It also called for a broader programme of research and development similar to the successful Brighton Fuse Project.

www.itutility.ac.uk/pilot-projects/ creative-digital-it-cdit-feasibility-study

Steve Brewer, University of Southampton, and David Rees, Henley Business School

### BRITAIN'S FORGOTTEN SLAVE OWNERS

A two-part BBC documentary examined the abolition of slavery in Britain and the choice by the government of the day to compensate slave owners for their loss of 'property'. The programme was based on the findings of two major research projects funded by the Arts and Humanities Research Council (AHRC) and ESRC. Using the records of the millions of pounds paid in compensation to slave owners for the loss of their 'property', the researchers documented over 46,000 individual claims and awards made to those who either owned slaves or benefited indirectly from ownership. A major output of the research is the first freely accessible database of Britons involved in slave-ownership, which can help people explore their family, local and regional histories, and help increase understanding about a national past that can often be forgotten or ignored. www.ucl.ac.uk/lbs

Professor Catherine Hall, University College London



### WHAT A DOPE

How long has cheating in sport been going on and who are the biggest culprits?



#### IN THE BEGINNING

The practice of doping in sport could be as old as organised sport itself. Even in Ancient Greece, athletes used special diets and stimulants to build strength. But it was not until the 1920s that it became clear that restrictions were needed on drug use in sport.



The International Association of Athletics Federations, the first International Sport Federation, bans the use of stimulating substances in 1928, paving the way for many sports to follow.

1928



23. An autopsy reveals traces of

amphetamine.





Over 120 countries unite to sign up to a revised Anti-Doping Code, establishing National Anti-Doping Organisations (NADOs). Each must: test their national athletes during and outside competitions, and athletes from other countries competing within their country; adjudicate anti-doping rule violations; provide anti-doping education.



#### 2000s

be matched.

An international framework to deal with doping is developed, led by WADA and the World Doping Code. It is a decade where cycling hero Lance Armstrong wins then loses everything in one of sport's greatest doping scandals, and a fall from grace that is unlikely to



The IOC convenes the first World Conference on Doping in Sport in Lausanne in February 1999. Following the proposal of the Conference, the World Anti-Doping Agency (WADA) is established on 10 November 1999.



WORLD ANTI-DOPING AGENCY



#### THE FUTURE

High-profile athletes are dogged by controversy but in summer 2015, with former Olympic champion Lord Coe becoming the new President of the IAAF and declaring "zero tolerance" of doping, the struggle against drug cheats remains top of the agenda.

#### **SUBSTANCES**

Substances/doping methods are banned when they meet at least two of three criteria: they enhance performance, pose a threat to athlete health, violate the spirit of sport. Headline-stealing abusive substances or practices include:



#### **BUSTED!**

Some of the most high-profile sporting cheats to have been caught out in the last 30 years, along with the ways in which they disgraced themselves and their sports:

#### **Anabolic steroids**

Testosterone is an example of such a steroid. Increases muscle growth and leads to quicker recovery time.



#### **Ben Johnson**

The sprinter beat Carl Lewis and set a new world record in the 1988 Olympic Games, but tested positive in his post-race test and was stripped of his medal and new record.

#### **Blood doping**

Substances such as EPO increase red blood cell mass leads to better stamina and performance.

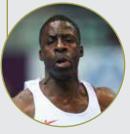


#### **Diego Maradona**

The footballer tested positive for cocaine in 1991 during Italia 90, leading to a 15-month ban. He also tested positive for ephedrine at the 1994 World Cup.

#### **Blood transfusions**

Use of athlete's own or someone else's blood increases stamina and performance.



#### **Dwain Chambers**

The British sprinter tested positive for THG in 2003 and received a two-year ban from athletics. A lifetime ban from the Olympics was eventually overturned - he ran at the 2012 London Games.



#### 1966

The cycling and football federations introduce drug tests; the first Olympic testing follows at Grenoble (winter) and Mexico (summer) in 1968.



#### 1998

A large number of prohibited medical substances are found by the police in a raid during the Tour de France. The scandal leads to a major reappraisal of how doping is managed.

#### 1970S/1980S

Athletes' use of illicit substances continues to hit the headlines with rumours of statesponsored doping in countries such as the former German Democratic Republic. World-record-winning athletes like Marita Koch were plaqued by rumours of illegal substance abuse throughout their careers, at a time when such things were hard to detect.



#### 1974

A reliable test for anabolic steroids is introduced, with the International Olympic Committee (IOC) adding them to the Prohibited List in 1976.



#### 1988

100m champion Ben Johnson is disqualified at the Seoul Olympics after a positive drugs test the most high-profile drug cheat to be caught out to date. Methods of enhancing performance become ever-more sophisticated.



The IOC bans 'blood doping/ boosting' - the practice had been around since the 1970s but it can take years to get to grips with complex, hard-to-detect practices.

#### Diuretics

Can prevent detection of banned substances as well as help athletes lose weight.



#### **Chinese swimmers**

In the 1990s gold medals and world records galore were won and broken. Swimmers tested positive for steroids and hGH and other performanceenhancing drugs.

#### Ephedrine

A stimulant to the central nervous system that can decrease reaction time but increase strength.



#### Festina cycling

A top Spanish/French cycling team in the 1990s, the team was caught with large quantities of EPO in 1998 during the Tour de France. Several team members were disqualified.

#### Human Growth Hormone (hGH)

A natural hormone – promotes muscle, bone and cartilage growth and thus recovery time.



**Narcotics** 

Cocaine is a stimulant.

Makes you think you're

superhuman. You're not.

#### Marion Jones

The first woman to win five medals at a single Games. In 2007, she was found to have been taking performance-enhancing drugs; all her medals were stripped from her.

#### THG

An anabolic steroid - helps develop muscle mass, promoting increased strength and power.



#### Lance Armstrong

The seven-time winner of the Tour de France was finally stripped of all titles in 2012, and was banned from all sports, following the WADA code.