# Helen Margetts

## Digitalisierung und Demokratie

Meyer-Struckmann-Preis 2020 Digitalisierung und Demokratie Meyer-Struckmann-Preis 2020: Prof. Dr. Helen Margetts OBE FBA Reden zur Verleihung des Meyer-Struckmann-Preises durch die Philosophische Fakultät der Heinrich-Heine-Universität Düsseldorf im November 2020

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Achim Landwehr (Hrsg.) Digitalisierung und Demokratie Meyer-Struckmann-Preis 2020 Prof. Dr. Helen Margetts OBE FBA

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### Prof. Dr. Anja Steinbeck Rektorin der Heinrich-Heine-Universität Düsseldorf

Rektorin der Heinrich-Heine-Universität in Düsseldorf seit November 2014 (Jahrgang 1966). Studium der Rechtswissenschaften in Mainz und Genf. Nach Promotion (1992) und Habilitation (1998) folgte 2001 ein Ruf auf einen Lehrstuhl für Bürgerliches Recht, Handels- und Gesellschaftsrecht und Gewerblichen Rechtsschutz an der Universität zu Köln sowie 2003 die Ernennung zur Direktorin des Instituts für Gewerblichen Rechtschutz und Urheberrecht. Von 2011-2014 war sie Prorektorin der Universität sowie von 2004–2014 Richterin im Nebenamt am Oberlandesgericht Köln. 2020 vom Centrum für Hochschulentwicklung und der ZEIT als Rektorin des Jahres ausgezeichnet.

#### Grußwort

Ladies and Gentlemen, dear guests,

I am delighted to welcome you all to the awarding of the Meyer-Struckmann Prize 2020.

Today's online conference is an unusual format for the presentation of a humanities award in unusual times. But at the same time, meeting in a virtual space could not be more appropriate to honor this year's prizewinner, who has rendered outstanding achievements in her research work on Digitization and Democracy.

Dear Professor Margetts, on behalf of Heinrich Heine University I would like to welcome you and congratulate you on receiving this outstanding prize.

Let me briefly introduce you to our guests:

Helen Margetts is Professor of "Society and the Internet" at the University of Oxford. She is also Programme Director for Public Policy at the Alan Turing Institute in London. As a political scientist she investigates the nature and implications of relationships between governments, citizens and related digital technologies. She has written over 150 articles and policy reports and six books on the topic. The latest one "Political Turbulence: How Social Media Shape Collective Action" has received great attention from the international scientific community and beyond. We will certainly hear from you about insights into the impact of social media on politics and political behavior. But one thing in advance:

What really impressed me is your statement that social media makes it possible to take political action with just a few clicks. We all know it from Facebook, Twitter, Instagram or blogs: Posting comments, sharing articles, leaving likes can become "tiny political acts" – as you named it. People take part in political decision-making who have never been interested in politics before. It is now much easier for them than in the days back, when they had to go out and engage in a political campaign. You called it "the democratization of the act of doing politics". You have, for example, referred once to the role of social media for political revolutions as we saw in the Arabian spring of 2011.

But there is also always a flip side. Think of fake news, shit storms, chat-bots, or the way the still-reigning American president communicates. We are in the middle of a technical revolution, which is accompanied by social transformations. We have to take a close look, understand the political opportunities of the Internet, but also keep an eye on the challenges. This is where the humanities and especially the political scientists come into play.

The humanities and political sciences strive for interdisciplinary and multi-perspective explanations. They attempt to reflect the complexity of our world. In doing so, they can reveal hidden power relations, disruptions and ambivalences. It is these strengths that the international Meyer-Struckmann Prize has been honering now for 15 years.. I am very glad about the commitment of the Meyer-Struckmann Foundation that puts the relevance of the humanities in the spotlight. The prize honors outstanding personalities who examine social structures, changes and challenges against the background of a critical historical awareness.

Dear Professor Margetts, once again my most sincere congratulations. I wish you all the best for your further research activities. Enjoy your success today!

And I wish you all a great event and later – at the lecture by Helen Margetts – exciting insights into the connection between politics and the internet.

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### Prof. Dr. Dres. h. c. Gert Kaiser Vorsitzender der Meyer-Struckmann-Stiftung

Rektor der Heinrich-Heine-Universität von 1983 bis 2003. Vorsitzender der Meyer-Struckmann-Stiftung. Studium der Germanistik und Romanistik in Heidelberg und München. Promotion (1964) und Habilitation (1970). Ruf auf den Lehrstuhl für Ältere Germanistik in Düsseldorf (1977). Wissenschaftliche Beiträge und Bücher zur Literatur des hohen und späten Mittelalters.

#### Grußwort

Ladies and Gentlemen,

it is my pleasure to congratulate an outstanding colleague whose books and papers I deeply admire. And as the representative of the Meyer-Struckmann Foundation I assure you that the members of the board of the foundation are pleased and honored to have you among our laureates.

The foundation is the very generous legacy of a well-known CEO of a German bank, the Trinkaus & Burkhardt Bank located in the Rhine-Ruhr area.

What is noteworthy too: Fritz Meyer-Struckmann dedicated his fortune explicitly to the promotion of the "Geisteswissenschaften". He was deeply convinced that this very academic field makes an important contribution to the advancement of society.

I am convinced that our 2020 laureate is a great representative of this noble hope.



#### Prof. Dr. Achim Landwehr Dekan der Philosophischen Fakultät

Achim Landwehr, geb. 1968. Studium der Geschichte, Germanistik und Rechtswissenschaft 1990–1995 an den Universitäten Augsburg, Freiburg, Basel und Dublin. 1996 bis 1998 wissenschaftlicher Mitarbeiter am Max-Planck-Institut für Europäische Rechtsgeschichte in Frankfurt am Main. 1999 Promotion in Freiburg im Breisgau. 2000 bis 2003 wissenschaftlicher Assistent am Lehrstuhl für Europäische Kulturgeschichte der Universität Augsburg. 2003 Ruf auf eine Juniorprofessur für Europastudien an der Heinrich-Heine-Universität Düsseldorf. 2005 Habilitation. 2008 Ruf auf die Professur für Geschichte der Frühen Neuzeit an der Heinrich-Heine-Universität Düsseldorf. Seit 2019 Dekan der Philosophischen Fakultät der HHU.

#### Grußwort

Dear Helen, dear all,

I would like to welcome you all very warmly to this online award ceremony of the Meyer-Struckmann Prize 2020! I am particularly pleased that the President of Heinrich Heine University, Prof. Anja Steinbeck, is here today. And I am no less pleased about the participation of

Member of the University Council Bauschke-Hartung, dear Ricarda! Vice President Marschall, dear Stefan!

Vice President Mauve, dear Martin!

Equal Opportunities Officer of Heinrich Heine University Düsseldorf Anja Vervoorts,

President of the Robert-Schumann-Conservatory Düsseldorf Volker Kalisch,

Vice Dean of the Faculty of Arts and Humanities Skrandies, dear Timo! Director of CAIS Michael Baurmann,

Ladies and gentlemen!

And especially, dear Professor Margetts, dear Helen,

please, let me tell you what I'm NOT going to do tonight.

First of all, I will not be speaking for very long. I promise, I'll keep this short.

Secondly, I will not speak at length about our laureate, although there is a lot to say about Helen Margetts. It is certainly no exaggeration to point out that she is one of the world's outstanding scholars in the field of digital governance, that she has dealt with the relationship of the internet and society in a very visible way on an international level, and that she is one of the leading researchers in the field of digital transformations and political decision-making processes. But I don't want to say anything more now about Helen Margetts' merits, because Prof. Baurmann will be able to do that in much more detail and – above all – much more competently. Thirdly, I will not give any of the speeches typical of Covid-19 times – which are, of course, fully understandable. I could now wordily regret in the subjunctive what could have been possible in the context of this ceremony – if, yes, if we weren't living under the conditions of a pandemic, and so on and so forth.

I would rather not do that. Instead, I'm happy, without any subjunctive, that we can award the Meyer-Struckmann Prize to Helen Margetts today!

And I would like to make two points from the perspective of the Faculty of Arts and Humanities. Firstly, it is always a great honour and pleasure for us to be able to award the Meyer-Struckmann Prize. It gives us a wonderful opportunity to draw attention to the research topics of our Faculty – and even more importantly: to be able to honour renowned researchers and scholars for their life's work.

Secondly, the connection between digital transformations and democracy is a research focus which is of great importance to our faculty – and I may also say that it plays an important role for our entire university. There are numerous researchers and research groups within the faculty who are working on questions of how our political and social lives change under the conditions of digital transformation – and it is therefore no coincidence that the Meyer-Struckmann Prize 2020 has been awarded with this thematic focus.

I would therefore like to conclude by thanking everyone who contributed to the success of this certainly unusual event. I would like to thank our President, Prof. Anja Steinbeck, and Prof. Baurmann for their willingness to speak tonight. I would especially like to thank Martina Huiras, who this year once again, has made this award ceremony possible by organising this evening.

But above all, dear Helen, I would like to offer you my heartfelt congratulations on receiving the Meyer-Struckmann Prize 2020.



### Prof. Dr. Michael Baurmann Institut für Soziologie und Direktor des CAIS

Michael Baurmann studierte Soziologie, Philosophie und Rechtswissenschaft in Frankfurt. Von 1997 bis 2017 war er Professor für Soziologie an der Heinrich-Heine-Universität Düsseldorf, deren Senatsvorsitzender er von 2010 bis 2015 war. Seit 2017 ist er Seniorprofessor. Er war bis 2019 Gründer und Sprecher des Düsseldorfer Instituts für Internet und Demokratie (DIID). Seit 2017 ist er wissenschaftlicher Direktor des Center for Advanced Internet Studies (CAIS) in Bochum. Seine Forschungsschwerpunkte sind allgemeine sozialwissenschaftliche Theorie und Soziale Erkenntnistheorie, epistemische Dynamiken der Vertrauensbildung und internetvermittelte Partizipationsprozesse. Er war Gastprofessor und Fellow an der Australian National University, der New York University, dem Instituto Tecnológico Autónomo de México, dem Alfried Krupp Wissenschaftskolleg Greifswald und dem Institute for Future Studies in Stockholm.

#### Laudatio

Dear Professor Margetts, dear guests, colleagues and friends,

I am really delighted that the laureate of the Meyer-Struckmann Prize this year is Professor Helen Margetts. She is a scientist with an outstanding international reputation who has acquired great merits for her research in digitalization and democracy. It is an honour for me to briefly introduce some cornerstones of her academic career and research profile.

Helen Margetts is Professor of Society and the Internet at the University of Oxford and Director of the Public Policy Programme at the Alan Turing Institute. The Alan Turing Institute, which bears a famous and challenging name, is the national institute for data science and artificial intelligence in Great Britain. The universities of Cambridge, Edinburgh, Oxford, Warwick and the University College London created The Alan Turing Institute in 2015. Eight new universities joined the institute in 2018. At the Turing, computer scientists, engineers, statisticians, mathematicians, and social scientists work together across disciplines to generate impact through theoretical development and application to real-world problems. The institute nurtures a network of industry, public sector, and third sector partners. It defines as its mission to make great leaps in data science and artificial intelligence research in order to change the world for the better.

Prior to her appointment at the Turing Institute, Professor Margetts was director of the Oxford Internet Institute from 2011 to 2018. She played a vital role in developing this institute to one of the world's leading centres for interdisciplinary digitalization research. Before this she was the first professor of Political Science and Director of the School of Public Policy at University College London.

Professor Margetts is a member of United Kingdom government's Digital Economy Council, the Home Office Scientific Advisory Council, the World Economic Forum Global Agenda Council on Agile Government and the Ada Lovelace Institute for Data Ethics. In 2018 she was awarded the Friedrich Schiedel Prize by the Technical University of Munich for research leadership in technology and politics. In 2019 she was elected a Fellow of the British Academy. For the policy impact of her research she received a prize with a very fitting name: the Political Scientists Making a Difference Award. 2019 she was awarded an OBE, an Order of the British Empire, for her services to social and political science.

Professor Margetts has researched and written extensively about the relationship between technology, politics, public policy and government including over 150 articles and policy reports and six books. She has presented her work all over the world at forums from the Hay Literary Festival, Harvard University and MIT, to the Royal Society and Davos, as well as at innumerable academic and policy-making events and in media appearances.

Helen Margetts stands for a close linkage between basic research, application oriented solutions and practical relevance. The political and societal impact of her scientific work is of central concern to her.

This objective is also paramount in the guiding principles of the Turing Institute's Public Policy Programme which Professor Margetts is leading. The programme has the aim of developing research projects, tools, and techniques that help governments innovate with data-intensive technologies. The researchers work alongside policy makers to explore how data science and artificial intelligence can inform public policy and improve the provision of public services – from allocating resources in the fairest and most transparent way to designing personalised public services that are tailored to people's individual needs and situations.

Essential for this programme is the conviction that governments can reap the benefits of digital technologies only if they make considerations of ethics and safety a first priority. Therefore, the public policy programme of the Alan Turing Institute cooperates with policy makers to develop well-crafted laws and sensible regulation, using the ethical principles and norms that clarify the socially acceptable uses of these technologies.

A recent publication by the Public Policy Programme embodies these ambitions: "Understanding Artificial Intelligence Ethics and Safety". It provides guidance for the responsible design and implementation of algorithmic systems in the public sector. The guide outlines values and principles to assist political and administrative actors in ensuring that they develop and deploy Artificial Intelligence ethically, safely, and responsibly.

The latest book by Professor Margetts herself is "Political Turbulence: How Social Media Shape Collective Action". It won a prize for the best politics book in 2017 and features many qualities which are significant for Helen Margetts' work.

The book demonstrates how it is possible to span a bridge between basic theoretical groundwork, sophisticated empirical research and concrete practical applications and recommendations.

Its leading question is how the dissemination of social media changes the dynamics of mobilization – from global political movements to neighbourhood campaigns. How does mobilizations via social media get started, how does they operate, why does some succeed, while other fail?

The starting point of the inquiry is the basic fact that the incentives of individuals to participate are fundamentally reshaped in the context of social media. Participations are possible with much lower costs than traditional participation. Cumulative tiny acts of political engagement, micro-donations of money, time, and effort can aggregate to form a large-scale mobilization and powerful campaigns for policy change. By this the Internet facilitates the mobilization of individuals and groups who have traditionally not participated before.

Additional incentives for participating like the visibility of one's own pro-social actions and social information about the behaviour of others are also more easily available in digital contexts. By means of analyses of digitally generated data and experimentation, it is shown in the book that visibility is a powerful determinant of people's propensity to participate in collective action, whereas social information emerges as the optimal form of social influence for maximising the chances of providing a public good. Platforms that provide social information will therefore be more successful in raising participation, encouraging civic engagement and campaigning than those that do not.

As a consequence of the new options and incentives digital instruments offer for political participation, social media inject turbulence into political life. A small number of unpredictable, extreme events can inject chaotic dynamics into every area of politics, acting as an unruly influence on political life. They facilitate a non-normal distribution of mobilizations, where most fail and few succeed dramatically. Political mobilizations can become viable without leading individuals or organizations and proceed to critical mass and achieve the policy or political change at which they are aimed. Turbulent pluralism is the outcome with politics which are unstable, unpredictable, and often unsustainable.

To summarize the challenge facing social science when confronted with these dynamics, an apt and revealing analogue is used in the book: for the social scientists, it is said, the tiny acts of political participation that take place via social media as units of analysis are the equivalent of particles and atoms in a natural system, manifesting themselves in political turbulence.

Nevertheless, the book ends with a quite optimistic outlook: for citizens digital media create a new capacity to set the political agenda from outside the political system and unleash more citizen-based politics. For policy makers the data generated from social media can allow them to monitor and understand undercurrents of public opinion and dissatisfaction and could be deployed by governments to understand trends and patterns in citizens' needs, preferences, concerns, behaviour, and complaints. They can be used by political decision-makers as a barometer of their own legitimacy or illegitimacy, and to identify the warning signals of critical transitions.

#### Well, the future will tell!

If I may make a personal remark, I was especially pleased while reading the book that it demonstrated that research in the digital era can profit significantly from classical work in the social sciences like Mancur Olson's seminal work on collective action, Mark Granovetter's groundbreaking theory about the role of strong and weak ties or the threshold models of collective action by Thomas Schelling. Too often the impression is nurtured that we have to start from scratch when in reality the insights of earlier work in fundamental social mechanisms can be adapted very successfully to analyse and understand the new digital world and its dynamics.

Finally, I would like to repeat what I said to Professor Margetts on some other occasion: Brexit, which made many of us very sad, is not the end of friendship and cooperation. Therefore, I am especially pleased that we have the privilege of honouring a leading scientist from the United Kingdom and thereby able to send a little message of how much we appreciate the work of our British colleagues and that we very much hope for ongoing mutual exchange and collaboration in the future too!



#### Prof. Dr. Helen Margetts OBE FBA

Helen Margetts OBE FBA is Professor of Society and the Internet at the University of Oxford, and Director of the Public Policy Programme at the Alan Turing Institute for Data Science and AI. She was Director (2011-18) of the Oxford Internet Institute, a multi-disciplinary department of the University of Oxford and Director of the School of Public Policy, UCL (2000-4). She has degrees in Mathematics (BSc), Politics (MSc) and Government (PhD, LSE). She has researched and written extensively about the relationship between technology, government, politics and public policy, including Political Turbulence which won the Political Studies Association's 2017 prize for best politics book.

She received the Technical University of Munich's Friedrich Schiedel prize (2018), the O.B.E for services to social and political science (2019) and held a Senior Chair in Technology & Society at the Library of Congress (2019). She became a Fellow of the British Academy in 2019. In 2020, Professor Margetts was awarded the Meyer-Stuckmann Prize for the promotion of humanities and social science research.

#### Dank und Vortrag

Digitization and Democracy in a Crisis

My first and most important task is to say how honoured, humbled and happy I am to receive the Meyer-Struckmann Prize. So, I would like to say a huge thank you to the Philosophy Faculty of the Heinrich-Heine-University. As a social science researcher, who started off in mathematics, to receive a prize for work on 'Digitization and Democracy' in the field of humanities and social science from a Philosophy Faculty feels like true multi-disciplinary acceptance. As I will say in the course of this talk, I believe that research in this area is an inherently multi-disciplinary exercise which spans disciplines across the social sciences and humanities as well as the mathematical, physical and life sciences. I have been fortunate throughout my academic career to work in universities and departments that make this kind of multi-disciplinary research possible, in particular the Oxford Internet Institute at the University of Oxford and more recently, the Alan Turing Institute for Data Science and Artificial Intelligence. So, I would also like to thank my wonderful colleagues in these institutions and my co-authors in other universities too, without whom the work that won this prize could not have been carried out. And lastly, in this sad year when my country has tragically left the European Union, it is wonderful to receive this sign of international friendship and collaboration from a great German University.

I. Introduction

This talk is about the role of digitization in democracy overtime – something that I have been thinking about since I started my career in the 1990s. Looking back, I have been an outlier in terms of seeing the positive side of this relationship. So, in this talk I will explain these 'reasons to be cheerful'. We all need that at the moment, in these strange times.

I will take a relatively simple definition of democracy as being underpinned by the two principles of popular control, and political equality of that control (Beetham, 1994) in two key areas:

• politics; the extent to which ordinary citizens are self-determining agents, with equal rights to have a say on issues that affect their lives – with control over policy-makers – through elections and participation in civil society (politics), and transparency and accountability of government (policy)

• policy; the extent to which every citizen has an equal right to influence collective decisions, and to have their interests considered when they are made, with transparency and accountability of government (Beetham, 1993: 7; Beetham, 1994: 28).

My work has crossed between these two areas over time, and I will discuss both of them here.

Political science scholarship has oscillated between two extreme positions on the role of digitization in politics or policymaking. Until the 1990s, the dominant position was that these technologies made no difference to the essence of politics, acting merely as a neutral tool used by some large organisations. Somewhere in the 2000s, this view switched over completely to a strongly negative position, to the extent that the last few years have brought a rash of books which implicate digital technology, most of all social media, in the fast approaching 'end of democracy'. In contrast, I argue that there have been positive impacts for popular control and political equality in both policy and politics. But these technologies have ushered in some new control problems, such as an injection of randomness into political systems, and threats to political equality from the powerful new stakeholders - Facebook, Google, Microsoft and so on who shape 21st century democracy. Then I will consider how digitization and democracy have fared in the pandemic crisis, observing both possibilities (such as the use of data-driven technology for more robust and responsive policymaking), but also the challenges of using those technologies in crisis settings. Finally, I'll provide some thoughts on how to reassert control over the internet giants and their role as gatekeepers to politics.

2. Digitization and Democratic Policymaking

First, I will talk about policymaking and governance. In the 1990s, when I entered the academic world, the pervasive view in scholarship was that digital technology didn't make any difference to popular control of government or policy. The technology of the time was regarded as policy neutral, a tool to make things more efficient, but without significance for the work of policymakers or political leaders, even while those same leaders were proclaiming the 'white heat of technology' as a crucial furnace for economic growth. In my work, I have found myself consistently out of the mainstream in this respect. I arrived as a politics student at the LSE in 1990, after 10 years in the private sector as a programmer and systems analyst. I was amazed, when taught about bureaucracy and public administration by the great Christopher Hood - that computers or technology were never, ever mentioned. At this point I decided to find the computers in government and to write about them - the ultimate topic of my PhD. I found a steadfast reluctance on the part of other scholars, political commentators or civil servants themselves that technology was anything more than a policy neutral tool, albeit one that it was difficult to get the expertise to manage. Any possible democratic influence that came from technology inside the government would be negative, a view driven by anti-modernist claims that policymaking would become more authoritarian and surveillance would be ubiquitous, with a new technologically aided Leviathan - the 'Control Revolution' or the 'Computer State' (Beniger, 2009; Burnham, 1983). These two views - of 'no change' or 'dramatic, anti-democratic change' - persisted in the face of a rather different reality. In practice, computer systems became integral to government administration, but governments struggled to manage them. If computer systems were mentioned in public administration literature, it was in audit office reports of failed projects, troubled contract relationships and massive cost overruns. Rather than using such systems to seize control, policymakers were not keen to be associated with such projects, preferring to leave them to IT departments or to outsource them, particularly in countries where the New Public Management was enthusiastically endorsed, as in the UK.

I wrote my PhD and first book about those computer systems in the US and UK, arguing that they were by the 1990s integral to government administration and worthy of greater scholarly and policy attention, particularly in terms of managing governments' relationships with the massive global service providers that mostly delivered these systems (Margetts, 1999). Until the internet came along however, they had little democratic impact, in terms of changing citizens' ability to influence policymaking, apart from adding another layer of complexity and opacity to governmental operations. A lot of computerization was the process of automating large scale administrative systems – automating the rationalization that

bureaucracy had started – with the possibility to 'out-Weber Weber', as Christopher Hood elegantly put it. Just as bureaucracy has very little role for citizens – indeed, as Ivan Illich (1973) argued against the technocratic elite, a key consequence of bureaucratization was the disabling of democratic and popular capacities for decision – so did the new systems. They were policy critical, in that increasingly new policies could not be introduced without them and technological innovation started to drive policy innovation at this time – but they were visible to citizens only when they failed. Take three examples of major flagship policy programmes – Obama's Affordable Care Act, the UK Universal Credit programme, the Australian Health record – where in each case, the failure of the technology platform endangered the programme from the beginning.

Everything changed with the internet, the first digital technology to be domesticated by citizens and to generate social innovation. As internet penetration grew, so did interest in digital government (formerly the domain of a few lone scholars such as myself) and with Patrick Dunleavy and a team of researchers, we used a research programme into digitization in seven case study governments to propose the model of Digital Era Governance (Dunleavy, Margetts et al, 2006; Margetts and Dunleavy, 2013) as an alternative to the New Public Management and a new 'quasi-paradigm' for digital government, based on reaggregation, radical digitalization and needs-based holism which sought to simplify and change the entire relationship between government and citizens (Dunleavy, Margetts et al, 2005). As digital platforms such as Google, Amazon and Facebook became increasingly integral to everyday life, another important technological change emerged. People using these platforms generate so-called 'big data'; large-scale real-time fine-grained data that might be used to improve policymaking and service design. Data-driven technologies such as machine learning and agent computing offer new ways of doing government. They allow better measurement and detection; simulation and forecasting; and resource optimization (Margetts and Dorobantu, 2019). They allow the possibility of a governance that is more responsive, targeted and fair; sophisticated means tested benefits, variable road pricing, resource optimization. For the first time these data and these technologies make explicit key weaknesses in our systems of governance, such as racial or gender-based bias in decision-making. However, they can also replicate these biases in important ways, because the technologies are 'trained' on data generated by the current system, so if a judiciary is biased, the decision support system that is developed from data regarding past decisions may be also. So, although these technologies offer far more exciting possibilities for better governance than the technologies I wrote my thesis about, they also introduce more troubling democratic challenges, which necessitate the development of rigorous, usable, citizen-focused ethical frameworks (Leslie, 2019). In 2018, I set up the Public Policy Programme at The Alan Turing Institute to research how these technologies might help to improve policymaking and service design, hoping that the UK government might be able to realise their potential more than with the first generation of computer systems, while tackling the ethical challenges.

3. Politics, digitization and tiny acts of participation

When use of the internet started to become widespread (from the late 1990s) much of political science retained the 'politics as usual view' (Margolis et al, 2000) that digital technology did not make much difference to the real business of politics, in terms of either popular control or political equality. Online participation was denigrated as mere 'clicktivism' or 'slacktivism' and so on (things you could do in your pyjamas, as dismissed scornfully by the Chair of a parliamentary committee to which I gave evidence in 1999). Commentators argued (rightly at the time) that technologies did little to affect elections, although big parties used database systems to target mailshots at voters, in those countries where data protection laws allowed. In this sense, in those early days digital technology was regarded as merely reinforcing existing political inequalities - making large political parties or interest groups more powerful relative to smaller parties and groups, as they had greater access to the relevant technology. Even shortly before the unanticipated events of the Arab Spring, the political commentator Malcolm Gladwell was writing a much-cited article in the New Yorker explaining 'Why the Revolution won't be Tweeted' (Gladwell, 2010) arguing that serious political movements like the civil rights movement could never be initiated or sustained by any kind of 'weak ties' participation that took part on social media.

Strangely, many scholars and (even most) political commentators moved swiftly during the 2000s from a 'the internet doesn't make any difference' to 'the internet – and social media in particular – are to blame for everything that is wrong with democracy', citing pathologies such as computational propaganda, misinformation, junk science, targeted advertising hate speech, echo chambers and filter bubbles. All these phenomena

are regarded to work against democratic participation and other forms of popular control, and echo chambers in particularly are viewed as feeding directly into growing polarization and populism, in spite of a growing range of evidence that online echo chambers are less pernicious online than they are offline (Bakshy et al, 2015; Guess et al, 2018; Bright, 2021). Concern over government surveillance - in part mitigated by the sunlight that social media platforms cast on government activities and operations shifted to that of Facebook and (less) Google - to the FAGAM group of companies, particularly Facebook. Digitization and the end of democracy: As we neared 2020, digitization was becoming more and more associated with the end of democracy, with a rash of books heralding the new crisis of democracy (e.g. Baldwin, 2018). In his 2018 book How Democracy Ends, the political theorist David Runciman entitles his chapter on the topic 'Technological takeover!', He argues that the new Leviathan is here indeed but has Zuckerberg at the head - the age-old threat to democracy from corporations finally made real. He also argues that digitization has strengthened the hold of authoritarian, non-democratic regimes. In this way, digitization has been associated with a fresh crisis of democracy, reminiscent of much earlier work (Laski, 1933).

I have found myself out of line with both these pervasive views. As internet penetration grew and grew, and possibilities for what you could do with it politically became greater (with the rise of social media and other platforms where citizens could generate content) - the 'business as usual' perspective became more and more baffling to me. In my book Political Turbulence: How Social Media Shape Collective Action (Margetts, 2016), the argument went like this: Social media make possible new 'tiny acts' of participation that extend the bottom end of Arnstein's 'ladder of citizen participation' (Arnstein, 1969). Politics is traditionally dominated by an activist elite, but these tiny acts are accessible to everyone. And they scale up in interesting, important and sometimes dramatic ways. They allow many more people to have a small part in controlling policymakers or shaping policy. They contribute to political equality, because they make it possible to fight injustice with no more resources than a mobile phone, something that even refugees fleeing a war-torn country will prioritise. And they can (even if they usually don't) scale up to dramatic levels of mass participation of millions of people which can provide an impetus for policy change. There can hardly be a country in the world where there have not been influential social movements, protests or demonstrations facilitated by social media that have not in some way engendered policy change. And these waves of support or antagonism are also influential at election time, as recent US elections have shown.

To me this looks more like democratic renewal than 'democracy in crisis'. In Political Turbulence we called the constellation of interest groups, social movements and collective action that social media facilitates 'chaotic pluralism'. This model for democracy shares the diversity, fragmentation and the 'many and competing elements' of traditional pluralism, while lacking the somewhat ordered and structured vision of the early pluralists such as Dahl and Lindblom or even pluralist revisions such as the Associative Democracy of Paul Hirst (1994) and goes beyond the 'accelerated pluralism' of Bimber (1998). The policy focus of modern social movements at least suggests an increase in popular control. Of course, such movements do not necessarily feed into change – but it is hard to imagine that the #MeToo movement, the latest generation of environmentalist movements (including school strike for climate) or the BlackLivesMatter movement are not provoking some kind of shift in thinking – or would have happened without social media.

However, the crucial importance of social media platforms in chaotic pluralism has introduced three 'control problems' to democracies worthy of analysis, as follows:

• There is a new randomness in modern social movements, which gave our model of pluralism the 'chaotic' label. In extensive analysis of data pertaining to petitions that we carried out for Political Turbulence, we identified that only a tiny percentage achieved some measure of success, but we were never really able to establish what determined that success. Such randomness contributes some sort of overall loss of control into political systems, a challenge to accountability.

• Just as social media facilitate tiny acts of 'positive' participation, that is participatory acts and movements that are geared at contributing to public goods such as environmental protection and social justice, they also facilitate 'tiny acts' of negative participation – such as the dissemination of misinformation, and 'speech acts' of hate, which pollute the social media environment and can lead to growth in extremism, radicalization and the spread of conspiracy theories such as QAnon and the anti-vaccination movement.

· Social media have ushered in the massive new gatekeepers of

democracy, the FAGAM (Facebook, Apple, Google, Amazon, Microsoft) suite of internet giants and a whole host of smaller platforms, which shape the information we see, the collective actions to which we contribute, and the company we keep and are, or at least are perceived to be by many policy-makers and commentators, outside of control.

So, although I do not believe that digitization in democracy is bringing about its demise and even offers possibility of renewal, it is important to tackle these control problems that it has facilitated. Some of my current research at the Alan Turing Institute for Data Science is focusing on negative political participation, such as hate speech, and an investigation of whether 'tiny acts' of hate are operating in the same way as we observed for political turbulence, or whether this is some wholly other form of organization (Vidgen et al, 2019).

4. Democracy in a crisis

Now, from March 2020 we have all been amidst a crisis. So how has the relationship between digitization and democracy fared? Digital platforms have become even more central, indeed critical to economic, social and political life, and we have seen massive swathes of pandemic-led innovation as services like primary care, schools - and indeed our own universities - moved online, at least in the short term but with far-reaching consequences for the future shape of organizations and cities. In the UK at least the actual nuts and bolts of the internet have held up well. But the radically renewed importance of the internet has highlighted and reinforced existing structural inequalities between those who have internet access and those who do not (the so-called digital divide) - those who have laptops and the skills to use them. These digital inequalities act as crucial intermediaries in political, social and economic inequality. We discovered that 1.5 million British children do not have a laptop, and that is now shaping their access to education. There is a new divide which technology determines - those that can work online at home - and those that cannot. Digitization has never been so integral to people's lives as in the years from 2020.

For policy, how have governments used digitization to help come out of the pandemic? Government became digital government in ways that it hadn't before, as public offices were closed and civil servants increasingly worked from home; the entire tax department of the UK government for example. In the early days of the crisis, some digitization moves looked like democratic threats – particularly contact tracing applications and new concepts such as digital immunity certificates, leading to a more general view that non-democratic states would do better in the pandemic by using such technologies in a non-democratic way (Kind, 2020). A year on, it is difficult to ascertain any direct relationship between the use of technology for authoritarian means, and success in handling the pandemic. Indeed, generally speaking, fancy innovations such as tracing apps have not worked particularly well. The relative success of East Asian countries (in particular, Vietnam) in terms of death toll has been more easily explained via cultural differences, the strength of governance institutions, investment in public health and 'a strong and deeply-held belief in good governance' (Mahbubani, 2020).

However, I confess to a certain amount of disappointment in the extent to which democratic states have used data and digitization to design interventions and control the public health crisis or the ensuing social and economic crises. Although there has been highly successful and innovative epidemiological modelling feeding into interventions geared at reducing the spread of the virus and emerging from the public health crisis, I believe that data and data science modelling could have been used more to chart and measure the accompanying economic and social crises and make policy accordingly. In some countries the crisis has - in the UK in particular - exposed discontinuity in data flows, such as not knowing how many people have died until 4 weeks after the event. Fine-grained data is often unavailable, but it is only possible to target a stimulus package at those companies which have suffered most if sectoral level data is available, and data on local businesses is essential to match economic support packages with local lockdown rules. Modelling has taken place in isolation, focusing either on economic or health outcomes, and there has been very little integrative modelling that brings together health and economic data in the same model, as well as other domains such as education, and to build on comparative models from other countries' experiences, that would really allow policymakers to make evidence-based policy choices. These weaknesses point to democratic loss. In times of crisis citizens look to governments to manage the situation, and failure to do so means a net loss of control that affects everyone, in the same way as a car out of control of a driver is not in the control of the passenger.

For politics, these platforms have allowed people who do have digital access to continue to express dissatisfaction, protest, and carry out tiny (and larger) acts of political participation, particularly around issues of equality, as testified by the heightened awareness and activity of BlackLivesMatter in the summer of 2020. Digital platforms have allowed community organisations to build support networks and campaign against the spiraling social problems engendered by the pandemic. There is a sense in which they have equalized participation, in that people regardless of physical disability or geographical location or caring responsibilities can participate. In some ways the innovation point applies to politics too, particularly where parliaments have become virtual, with potentially more serious discussion than the rowdy atmosphere of legislatures such as the UK House of Commons. There is more equality of representation among representatives with social responsibilities, given that travelling is no longer necessary. But again, digital inequality reinforces political inequality, as people who are digitally excluded or marginalized, are excluded from these acts of popular control too, with consequences for political equality.

However, there is a huge challenge to this democratic activity, which is the rise in online harms. As more people spend so much more of their time online, they are ever more likely to be exposed to hate speech, disinformation (particularly relating to the virus and possible cures or treatments), as well as financial scams and darker threats like radicalization and grooming. The World Health Organization has talked of an 'infodemic' of disinformation related to Covid-19 (including anti-vaccination propaganda) and a 'tsunami' of online hate, particularly directed at East Asian people.

In this way, the tendencies of the previous section are reinforced. There are plenty of possibilities for democratic decision making and the input of citizens, but spiraling inequality and growing resentment and fear could reinforce the control problems outlined above.

5. Take back control: institutional design for democratic resilience

How do we protect the best of digital democracy, while minimizing the control challenges presented here? We are inclined to let technological developments wash over us, as if they represent an unstoppable tide. This view is particularly pervasive in the age of artificial intelligence, where the idea that super-intelligent humanoid robots are poised to take over the planet has really caught the popular imagination. Perhaps this is particularly true in a crisis, worsened by the general 'out of control' feeling that an existential shock engendered by a global pandemic.

But there are ways of 'taking back control' (to borrow a phrase from
the UK's EU debate) of democracy in the digitization era. We need to resource and prioritise democratic processes and institutions, and that requires a continuous process of modernization. As Thomas Jeffersen (1812) put it, as inscribed on his memorial in Washington DC:

'.....laws and institutions must go hand in hand with the progress of the human mind. As that becomes more developed, more enlightened, as new discoveries are made, new truths discovered and manners and opinions change.....institutions must advance also to keep pace with the times....'.

Institutions and processes must keep pace with the technological times too. Here are some key steps for democratic change to keep up with the increasing ubiquity of data-intensive, digital technologies:

• First, change the digitization narrative. As noted above, the idea that technology itself is somehow out of control has attracted popular attention in liberal democracies, and the dangers of this narrative are illustrated by a UK example from the summer of 2020, when the Education regulator OFQUAL calculated the results of crucial school examinations that had not taken place because of school closures in May and June. They used a statistical process to standardize the results (originally estimated by teachers) by the historical results record for individual schools, as they had been asked to do by ministers and senior policymakers. Not surprisingly, high performing pupils in historically poorly performing schools, mostly in poor or deprived areas (exactly the students that universities aim to attract), received far lower grades than their teachers had calculated for them. In the ensuing furore - and ultimately, a U-turn to revert to the teachers' predicted grades - policy makers were keen to shift responsibility for the disaster, with the PM himself talking of 'mutant algorithms'. Students were seen demonstrating with banners proclaiming 'F\*\*\* the algorithm!'. In fact, the statistical process was not particularly sophisticated (it was not even based on machine learning) and merely did what it had been asked to do. But the debacle illustrates the dangers to democratic accountability if we allow our politicians and policymakers to blame data and digital technology for their own mistakes.

• For democratic policymaking, we need a value-driven public sector digitization ethos. To achieve decision making processes that are stable and robust in a crisis, can be held to account, and tackle long running issues of inequality and fairness, we need a branch of research and development in data-intensive technologies which focuses on public sector applications, and prioritises the administrative values of resilience and fairness over economy and cost-cutting through automating jobs. This 'public data science' would include continual and robust data flows of real-time, fine-grained data and integrative models that help policymakers make evidence-based decisions based on citizens needs and behaviour. We have a new research programme on 'Shocks and Resilience' using data science to put some of these ideas into practice in the public policy programme at the Turing Institute.

• To achieve this public sector digitization ethos, we need models of responsible innovation, which provide usable frameworks and tools based on philosophical principles for AI development, which mitigate challenges to fairness, accountability, trust and transparency posed by data science technologies, particularly AI. If we want public policy to be more responsive, transparent and accountable, and to treat people fairly – indeed, to satisfy the democratic criteria laid out at the start – we need it to be based on technology that has these principles baked in. At the Turing we have developed the first such official guidance of its kind for the UK government; it is not being followed right across the public sector – but it is a good starting point (Leslie, 2019, 2020). We also need innovation in the science of citizen involvement, with citizens' juries (Leslie, 2019), conventions and assemblies conducted with rigour and taking on new forms (Neblo et al, 2019).

• For politics, we need regulation of big tech's role in democratic participation, especially electoral regulation and regulation of hate speech and disinformation. In the UK, electoral law has not been updated since the use of social media became widespread. The big platforms have started to do more to fight against disinformation and hate speech (Trump's Twitter feed looked like a cigarette packet towards the end of his presidency, and ultimately he was removed from the platform), but it is little and late and it should not be in their gift. Europe has led the way on regulation of the democratic pathologies that social media have introduced. In all countries, we need electoral regulators with real teeth and technological capacity to understand what they may expect of platforms. We also need to

ensure that regulation frameworks take account of the continually shifting nature of political parties and do not just kick in at election time, as platforms are increasingly used for continuous campaigning by parties and groups alike. As well as regulation, we also need multi-layered solutions that include public pressure. Not all social media pathologies may be tackled with law. When there has been change in how platforms deal with problems like hate speech or misinformation, it has come because of pressure from public journalism and the general public.

Finally, achievement of any of these recommendations requires underpinning by rigorous, multi-disciplinary research into digitization and democracy. Such research must develop conceptual frameworks, normative principles and innovative methodologies that cut across scholarly disciplines and venture out from the academy into the world of policymaking and regulation. Designing democratic policymaking with data-driven technologies, or regulating big tech, is a highly multi-disciplinary exercise. My current collaborators include economists, philosophers, physicists and mathematical biologists, as well as political scientists and computer scientists. As probably everyone at this lecture knows, that kind of multi-disciplinary research is hard to facilitate and incentivize. This is the kind of expertise needed for democratic institutions to keep pace with the progress of human – and artificial – intelligence.

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