Civic Participation in the Datafied Society: Towards Democratic Auditing?

Data Justice Lab

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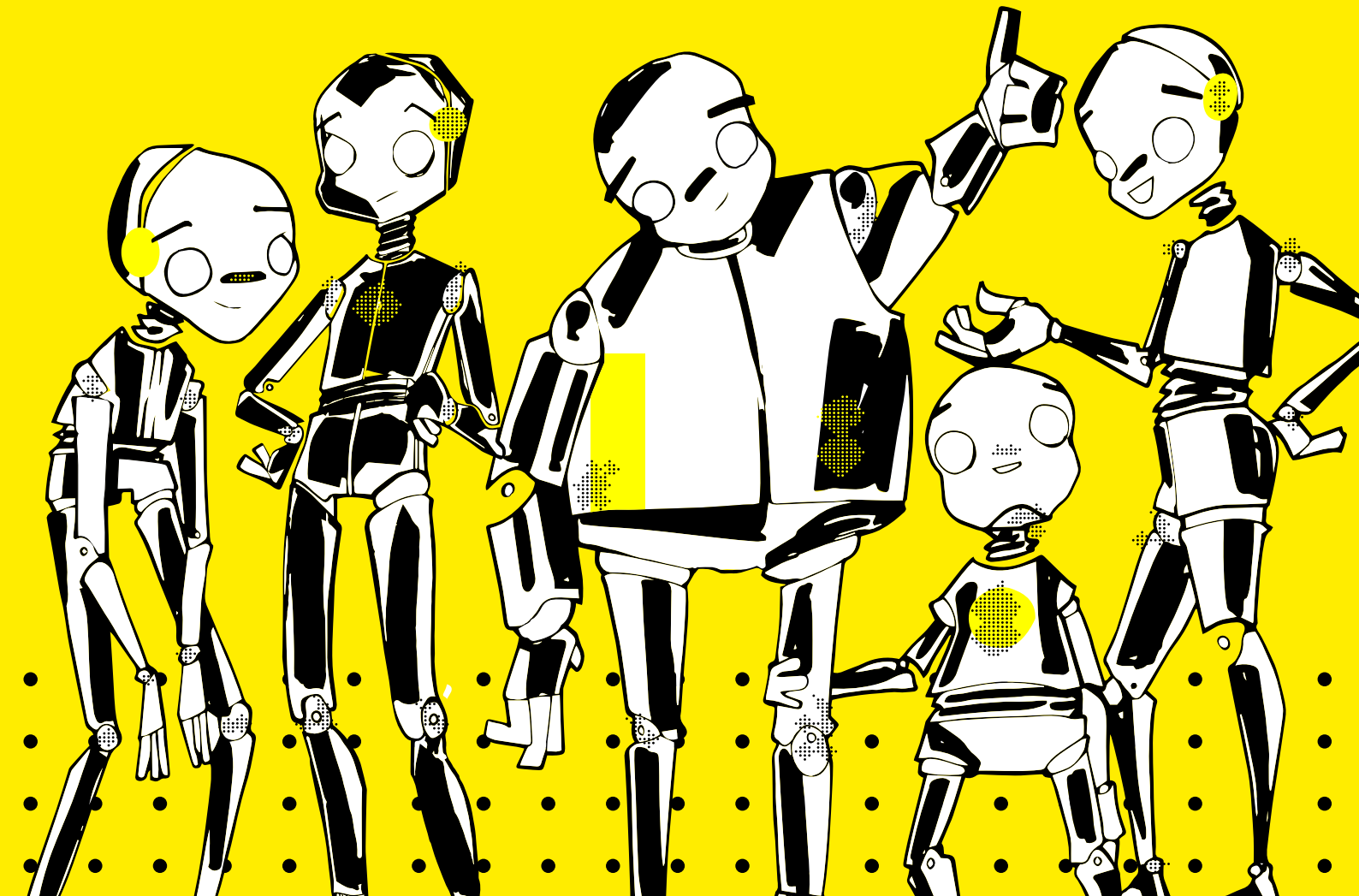

Civic Participation in the Datafied Society: Towards Democratic Auditing?

A Research Report by Arne Hintz, Lina Dencik, Joanna Redden, Emiliano Treré, Jess Brand, and Harry Warne.

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July 2022

Executive Summary

1. Datafied Society

Digital infrastructure increasingly enables the extraction, exploitation, processing and analysis of personal and behavioural data. Data analytics have not just become the core of the digital economy but also constitute a growing feature of the public sector. Wide areas of public administration are now based on, or at least informed by, the aggregation of data for the purpose of profiling, categorising, sorting, rating, ranking and segmenting populations, and then treating them distinctly. Scoring systems and other forms of predictive analytics are prime means to assess citizens yet these systems are applied mostly without the knowledge of those being analysed and the exact mechanisms of data analytics remain obscure. Citizens are classified according to criteria that are not transparent, with consequences they do not know about, and without an open way of redress. As citizens are continuously profiled and evaluated, there is a power shift from citizens to the state.

All this raises fundamental questions regarding the quality of democracy in a context of datafied administration and governance. Whereas a democracy requires that the people adopt the role of the sovereign, in a datafied society this sovereign does not have much knowledge, understanding, or say in how it is treated. Key questions arise: What are avenues for people to participate in decisions about the use of predictive analytics by public institutions? How can they intervene into an increasingly automated state? How can the datafied society be democratised?

To investigate these questions, this report addresses six themes: 1. Institutional dynamics; 2. Initiatives of civic engagement; 3. Oversight and advisory bodies; 4. Civil society strategies; 5. Alternative Imaginaries and Infrastructures; 6. Data literacy.

2. Institutional Dynamics

In order to explore the possibilities for public intervention into the institutional roll-out of data analytics in government, we investigated two case studies: risk based verification (RBV) and facial recognition technology (FRT). For RBV, we explored contextual factors relating to its implementation, including opportunities for the public to influence decision making processes. For FRT, we investigated regional differences in opportunities for citizen involvement in the UK that might be linked to the devolved political contexts in Scotland and Wales. Our case study of RBV points to a widespread absence of citizen and civil society consultations carried out by UK local authorities regarding the implementation and use of this system, as well as a quasi-consensus that it is not necessary for the public to be consulted on the use of this system. Given the proprietary nature of the algorithms underpinning RBV and the questions over its accuracy, we argue it is disappointing and inadequate that citizens are unable to engage in these issues. Regarding FRT, the findings similarly highlight few opportunities for citizens to be meaningfully involved in decisions about

the implementation and deployment of this technology. Both South Wales Police (SWP) and the London Metropolitan Police Service (MPS) have made some effort to inform the public but without meaningfully incorporating citizen views in policy development. Our findings paint a different picture in Scotland with a more thorough engagement with the issues at stake, and Scottish civil society appears to have provided space for debate and a more cautious approach to FRT. Whereas the Scottish Biometrics Commissioner's remit ostensibly provides a mandate for public engagement, we found that oversight groups in England and Wales operate with less transparency. Ethics committees and advisory groups appear to be a missed opportunity to seek public input.

3. Models of Civic Engagement

Under the broader banner of 'democratic innovation', the use of 'mini-publics' has been a particularly prominent model for advancing civic participation beyond electoral processes. Mini-publics encompass events that bring together a cross-section of the population to deliberate on an issue of great public concern and develop guidelines, principles or policies. Depending on their size, composition and policy orientation, different models include citizen assemblies, citizen juries, citizen summits, deliberative polls, public dialogues, etc. Some of these have increasingly been applied in the UK and elsewhere to discuss the use of data and AI. For example, a citizen jury in Manchester in 2019 addressed AI decision making in criminal justice, recruitment, and healthcare; a citizens' summit in London in 2020 brought together 100 people to deliberate on the use of health and care data; and a Citizens' Biometrics Council in 2020 explored the use of facial recognition technology by police. An important finding from these events is that citizens are able to investigate even highly technical and expertise-driven topics around data and AI and develop detailed policy proposals.

Our research suggests that participatory initiatives can serve as useful interventions into decision-making processes and incorporate citizen voices. Non-expert citizens are able to formulate preferences and policy responses to even complex issues such as datafication and AI. These initiatives have often had the most direct impact when they had a narrow policy focus. However this may simultaneously limit their broader democratic impact and allow the commissioning and organising institutions significant leeway to shape the agenda, limit the scope of deliberation and steer participants' perception of an issue. Deliberative initiatives that engage with narrow agendas rather than emerging as bottom-up popular intervention may thus risk becoming an exercise of legitimising policy decisions and thereby of 'engagement-' or 'participation-washing'. Further, while most mini-publics are based on a randomly selected cross-section of the population, the uneven implications of data analytics have led to calls for prioritising the inclusion of affected communities and marginalised groups. In the field of data and AI, wider societal representativeness has to be balanced with the need for incorporating marginalised voices. Finally, while these initiatives may open up policy debate, they do not transfer decision-making power to citizens. A more comprehensive institutionalisation of participatory models requires further development.

4. Oversight and Advisory Bodies

A broad set of oversight and advisory bodies have emerged in the UK to uphold accountability and public interest with regards to the development and use of data as well as data-intensive technologies such as AI. This data governance landscape forms a highly interconnected oversight ecology, with considerable overlap in terms of both the remit and the activities carried out by different bodies. There is a particular focus on gathering evidence for policy-making through reviews, research activities, and public education and engagement, leading to guidance for industry, the public sector and government. Restrictive policy and more substantive demands, such as for a moratorium on facial recognition technology, are less common. Our research highlights that - depending on the institution - a lack of power and/or enforcement means that oversight bodies tend to rely on affecting change through ethical frameworks and guidance.

While these bodies educate and inform citizens, and protect their interests by taking forward individual complaints, they focus less on providing opportunities for direct and participatory public scrutiny into data governance. Citizen participation has been advanced through the deliberation of data ethics and safeguards and through engagement initiatives (such as those outlined in the previous section). However our research indicates that these efforts are largely limited to short-term projects or sporadic exercises that do not constitute a coherent or systematic civic participation paradigm. The content and purpose of this engagement has often been confined to gathering public opinion or exploring broader principles that should govern data-driven technologies, but falls short of a more thorough democratisation of decisionmaking about datafication. Complementing institutional efforts, new forms of community oversight are emerging as grassroots initiatives guided by a more fundamentally participatory approach.

5. Civil Society Strategies

This section of the report explores how agendas of civic participation are formed and advanced by civil society groups (both in the UK and beyond); what their specific understandings and priorities are; and what challenges might inhibit community and citizen voices. The research illustrates considerable concern amongst civil society groups about the rapid roll-out of data systems in the public sector and the lack of community and citizen participation. It highlights different strategies pursued by civil society to protect civic rights, prevent harms from datafication, and advance citizen voices.

These entail advocacy on behalf of citizens through strategic litigation; policy advocacy activity; research investigations; and engagement with oversight bodies such as the ICO. Other strategies, such as the creation of data rights tools and leveraging data protection rights to resist data collection, have given citizens the opportunity to participate directly in the governance of the datafied society.

Whilst these different strategies have advanced citizen rights and interests, they have tended to be 'reactive' (after the harm) rather than 'proactive' (preventing the harm). Further, while the predominant focus on individual rights and responses has led

to significant improvements and support, interviewees pointed to the need for more collective approaches and systemic change towards a more people-centred datafied society. There was a general consensus amongst our interviewees on the need to connect data issues to broader questions of democracy and democratic process in order to advance civic participation in this space. This has involved a growing focus on areas such as the procurement of data systems. At the same time, civil society activity in relation to data issues is relatively fragmented depending, not least, on differences in representation and accountability. In particular, there was a recognition amongst several of the groups we interviewed that there continues to exist a degree of separation between technology-focused groups (e.g. digital rights) and social justice groups (e.g. welfare or migrants' rights). This separation was considered to stifle forms of civic participation especially in terms of reaching impacted communities to inform strategy and advocacy.

6. Alternative Imaginaries and Infrastructures

A set of promising alternative practices, models and imaginaries have emerged in social movement responses to datafication, particularly algorithmic resistance and data activism, and offer valuable approaches to rethinking data. Our interviews highlighted five imaginaries that could advance citizen participation in the datafied society. One concerns rethinking data as a public good, requiring the creation of new bottom up data governance models. The second imaginary centres on the accountability of algorithms, suggesting that datafied societies can be made more equal if algorithms are rewritten to correct for historic biases, particularly by reorienting them towards fairer resource allocation. Thirdly, and influenced by Community Wealth Building and public ownership debates, we may reimagine public procurement as a progressive process and a key site for citizen and democratic intervention that would see the procurement of data-enabled technologies opened up for community involvement, imposing more accountability on public-private partnerships. The fourth imaginary envisions the institutionalisation of citizen participation through citizen bodies and networks that have direct contact with decision-makers or direct involvement in decision making processes in relation to data. The fifth imaginary resists the power structures upholding datafied racial inequality and envisages black and other marginalised communities reclaiming and reappropriating data driven technologies, encompassing the process of big data abolition that is a template for simultaneously creating new data infrastructures while dismantling the power structures that uphold the status quo.

Our findings highlight some valuable lessons and broader issues. For instance, the procurement imaginary indicates that progressive procurement could be leveraged to systematise a degree of citizen participation before data systems are implemented, while the D4BL case study shows the importance of creating new data infrastructures in tandem with strong data activism and grassroots movement building. This spotlights concerns that technological transformations are limited unless they are accompanied by broader structural change. Technical solutions may rarely resolve deep-rooted and systemic non-technical problems. Further, the findings illustrate a concern that placing data and data infrastructures in the hands of the people may not address the prominence of underlying norms and values. Finally, the findings point to an unresolved tension between the individual

and the collective within some imaginaries, highlighting the limitations of individualised solutions to collective problems.

7. Data Literacy

Participation requires knowledge and understanding. Data literacy therefore represents an important component of broader agendas to advance citizen agency and empowerment. There is growing consensus amongst data literacy scholars and civil society that efforts to advance data literacy need to incorporate a broader understanding of data collection, analytics, automation, and predictive systems, as well as the ideologies, political-economic structures and power relations that underpin datafication. A key strategy in supporting the development of data literacy is the development of online tools that provide citizens with practical means to scrutinise data practices and to understand, shape, object and protest their datafied realities. While many of the existing tools focus on strengthening critical awareness among individuals, a growing number of resources mould data literacy into a collective endeavour.

Their limitations include a focus on already engaged citizens, at the expense of marginalised communities, unless this strategy is embedded in literacy development at schools, public libraries and community centres, and the training of practitioners such as teachers, community workers, librarians and youth workers. This prompts a deeper concern as to what extent data literacy promotes an ideal set of skills and type of citizen. The research problematizes the literacy-participation nexus by highlighting that critical awareness provided by data literacy tools is not necessarily translated by citizens into participatory action. Further, attempts to 'scale-up' literacy by reaching abstract publics often proves less successful than approaches that are more contextual and anchored to the everyday realities of the communities they are designed for. Our research suggests that data literacy tools and practices can have significant impact when they are created and/or used by specific communities to advance their own collective needs or political goals.

Introduction

Citizens are increasingly assessed, profiled, categorised and scored according to data assemblages, their future behaviour is predicted through data processing, and services are allocated accordingly. In a datafied society, state-citizen relations are increasingly affected by algorithmic decision-making. Yet while people become infinitely knowable, they have little ability to interrogate and challenge the use of their data. This raises significant challenges for democratic processes, active citizenship and public participation.

How, then, do we participate as active citizens in a society in which we are constantly assessed according to data analytics which we do not understand? How do we intervene into algorithmic governance processes and affect the development and management of the very data systems that increasingly organise society? How do we maintain civic participation in a context of rapid technological and social transformation, and how do we develop new democratic processes to ensure participation, transparency and accountability?

To explore these questions, members of the Data Justice Lab at the School of Journalism, Media and Culture (JOMEC) at Cardiff University carried out a research project between 2019 and 2021. With funding from the Open Society Foundations (OSF), we investigated how citizens can intervene into the development and implementation of data systems and how they can advance civic participation in an increasingly datafied society. Building on the previous research project 'Data Scores as Governance' which provided the first comprehensive analysis of data-driven citizen scoring in the public sector in the UK, this project analysed the practices, structures and constraints of citizen engagement with datafied governance.

We applied a multi-dimensional perspective to combine a broad set of social dynamics, organisational settings, and points of citizen intervention. Our investigation stretched across the following areas:

- Institutional dynamics: What spaces do institutions offer for consultations, feedback and critique, and to what extent do they offer space for meaningful citizen contributions?
- Models of civic engagement: What are the prospects and challenges of citizen assemblies, citizen juries, and other practices of citizen engagement?
- Oversight and advisory bodies: What would citizen-oriented and participatory forms of oversight entail?
- Civil society strategies: How can organised civil society advance people's voices and concerns with regards to datafication?
- Alternative Imaginaries and Infrastructures: What new agendas, concepts and practices are emerging in support of people-centred data infrastructures?
- Data literacy: How can knowledge about datafication advance people's role in data-related debates?

This report explores, maps and analyses pioneering citizen practices and emerging

forms of institutional reform, and seeks to offer insights into possibilities and challenges for democratic engagement, citizen inclusion and accountability. It does not claim to be comprehensive. Several prominent avenues for enhancing civic participation and accountability are not investigated here – incl. the substantial field of research and practice on algorithmic accountability, and growing interest in new forms of data stewardship, such as data trusts and data cooperatives. It focuses instead on possibilities for citizens to intervene into decision-making – typically, by government and the public sector – about the deployment of data systems, automated decision-making, and artificial intelligence.

As the Data Justice Lab is located largely in Cardiff, UK, the regional focus for this research was the UK and most of the case studies and practices we explored have occurred here. However we have situated these in the context of broader international developments. Some of the cases we looked at have unique national characteristics, but many of them constitute examples for developments and trends which can be observed internationally.

The research encompassed a wide set of interviews with representatives of government and oversight institutions, civil society organisations, and developers of technical tools and infrastructures. It included the review of academic literature, reports of participatory initiatives, and policy documents. And it benefitted from a multi-stakeholder workshop with experts and practitioners of civic engagement (June 2019) as well as the international academic conference 'Civic Participation in the Datafied Society' (May 2021), both of which were organised by the project team.

In addition to this report, the team produced a public sector guidebook on how to advance civic participation in the roll-out of data systems and a guidebook of civil society tools on advancing data literacy, both are available from our website http://www.datajusticelab.org. Each section was led by one member of this group, within a common framework and project design. Further, the website http://www.datafiedsociety.org was created to provide a summary of key arguments that are presented in this report. Academic publications are being developed at the time when this report is completed.

The structure of the report follows the six themes that formed the main axes of the research project. It first outlines the conceptual and theoretical context of civic participation in data governance, and explains the research methods that were applied. For each of the six themes, it then offers a more specific and focused literature review, a mapping or outline of prominent practices, and an analysis of interviews and documents. This structure differs slightly across the different chapters and themes but follows, in principle, a common approach.

This report was collectively researched and produced by the Data Justice Lab, including its co-Directors Arne Hintz, Lina Dencik, Joanna Redden and Emiliano Treré, and Research Assistants Jess Brand and Harry Warne. Each section was led by one member of this group, within a common framework and project design.

Overview of Themes

Part 01
Institutional Dynamics

Literature Review:
Government Uses of Automated Systems

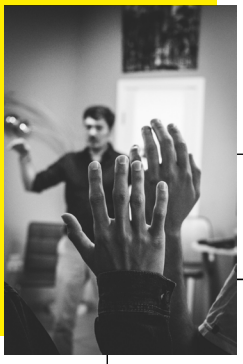
Case studies:
Risk Based Verification (Local Authorities)
Facial Recognition Technology (Police)

Part 02
Models of Civic Engagement

Literature Review:
Democratic Innovations and Mini Publics

Critical Mapping:
Participatory Models from Citizens' Juries to Deliberative Polling

Interview Analysis:
Experiences, Challenges and Opportunities of Participatory Methods



Part 03
Oversight and Advisory Bodies

Literature Review:
Role and Function of Oversight Bodies

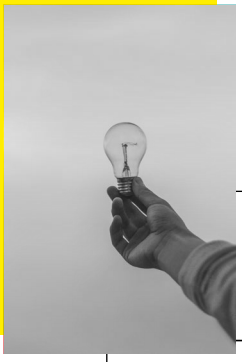
Interview Analysis:
Oversight, the Public, and Participation

Part 04
Civil Society

Literature Review:
Civil Society, Advocacy and Digital Rights

Critical Mapping:
Strategies to Advance Participation

Interview Analysis:
Challenges, Needs and Successes of Civil Society Interventions



Part 05
Alternative Imaginaries and Infrastructures

Literature Review:
Social Imaginaries, Social Movements, Technologies and Data

Case studies:
Five Data Imaginaries for Advancing Participation

Part 06
Data Literacy

Literature Review:
(Critical) Data Literacy and Participation

Critical Mapping:
Online Tools for Data Literacy

Interview Analysis:
Advancing Participation Through Data Literacy

Conceptual Context: Data and Participation

Data analytics are increasingly being used in government to capture, track and analyse human activity and to make decisions about public services—such as social security, health and housing—and state interventions—such as policing and criminal justice. Automated decision systems (ADS) are used by companies, local authorities and other state agencies to make predictions about citizens' needs and actions, and inform how public services are delivered. Public authorities hope these tools can lead to more efficient and effective public services, yet concerns have been raised over privacy implications, discriminatory effects, and the accuracy of data systems.

A growing set of concerns revolves around questions of democratic accountability. As people are increasingly categorised, profiled and scored with data that is collected about them, their performance as citizens is assessed and their position in society affected. Yet this usually happens without their knowledge, without an understanding of the implications for their lives, and with few possibilities to object or resist. How, then, can the public have a say in how these systems are used, and how can citizens influence the deployment of algorithmic and automated decision-making?

Before exploring these questions in more detail, this chapter will situate the research within ongoing academic debates around datafication and accountability, participation, and democratic innovations.

Datafication

The emerging capacities in analysing 'big data' have led to new opportunities 'to extract new insights or create new forms of value' (Mayer-Schönberger & Cukier, 2013, p. 8). Data analysis has enabled the private sector to enhance productivity and has created a new economic sector based on the processing of data about people. This has been hailed as a 'new industrial revolution' (Hellerstein, 2008). Yet data analytics have affected decision-making in a wider range of sectors. Algorithms - automated instructions to process data and produce outputs - may allow for understanding previous occurrences and predicting future behaviour, which may offer opportunities for both private and public governance (Gillespie, 2014). 'If data is the new oil', notes the New Economics Foundation, 'then algorithms are the new refineries' (McCann et al, 2018, p. 19).

Data analytics promise a scientific and fact-based method for tackling uncertainty. Risks are rendered perceptible through algorithmic calculation and can improve 'proactive' forms of governance (Amoore & Piotukh, 2016). This has been acknowledged in the context of security concerns, but also as an opportunity to enhance the delivery of public services and devise better responses to social problems. As technologically-generated and value-neutral information, data may reduce

subjective judgement and thus offer a more rational, impartial, reliable and legitimate way of decision-making (Mayer-Schönberger & Cukier, 2013).

However, these assumptions have been critically interrogated by scholars, particularly in the emerging academic field of critical data studies. A key concern has addressed the characterisation of data as benign, neutral and objective that reflects 'the world as it is' (Kitchin & Lauriault 2015, p. 3). Rather, as critics note, data is always constructed based on the goals, interests and cultures of institutions and individuals (incl. case workers, department heads, and the developers of algorithms), and the perceived objectivity and neutrality of data have been criticised as 'carefully crafted fictions' (Kitchin, 2014). This also means that the representation of 'reality' by data and, more specifically, the relationship between people and the data collected about them is not self-evident (van Dijck, 2014). Data analytics may provide a reduced lens on society (Berry, 2011) and shape the reality it measures by focusing on specific objects, methods of knowing, and understandings of social life (boyd & Crawford, 2012; Cheney-Lippold, 2017). Rather than representing society, data may construct it - as Kitchin (2017, p. 25) notes, data 'are engines not cameras.'

Further, critics have highlighted the risks and implications of increased monitoring and surveillance of populations through data (Van Dijck, 2014; Lyon, 2015) and have analysed a wider range of harms, such as discrimination, that may be caused by the use of big data (boyd & Crawford, 2012; Redden, et al., 2020). They have raised concerns regarding the 'operative logic of preemption' (Massumi, 2015) inherent in data-based governance that challenges practices and understandings of the democratic process (Andrejevic, 2017) and focuses on managing the consequences, rather than seeking to understand underlying causes, of social ills (Lyon, 2015). In a world dominated by security considerations, 'risk management' has become a prominent goal of many data analytics systems (Coaffee & Murakami Wood, 2006; Aradau & Blanke, 2015).

These challenges have become particularly pertinent with the increasing use of data systems in the public sector. Citizens are categorised, assessed and profiled based on a variety of personal and behavioural data, and public services as well as state interventions are targeted accordingly. Scoring systems and other forms of data analytics are used to compare and segment public service recipients and prioritise interventions. In previous research, we explored this practice of "citizen scoring" and analysed its impacts (Dencik, et al., 2018). Generally, the increasing use of data analytics in the public sector - and thus the emergence of the 'datafied society' - has significant implications for state-citizen relations (Hintz et al, 2019).

Algorithmic accountability

As a first step towards addressing these challenges, critics in academia and civil society have identified the need to understand the technological systems that profile and categorise us. Ongoing research on auditing algorithms and data systems (Kitchin 2017, O'Neil 2016, Reisman et al. 2018) has aimed at unwrapping the "black box" (Pasquale 2016) of algorithms and data systems, and has served to address the obscurity of their functions. Computational scholars have explored the reverse-engineering of algorithms as a strategy to better understand how they process data and thus improve transparency (Diakopoulos 2014).

Algorithmic accountability has emerged as a field of research that seeks to understand how algorithms work, how bias and inequality are coded into them, and how just and fair forms of algorithmic decision-making can be achieved (Wieringa 2020). Several divergent approaches exist. Some have proposed technical interventions to fix biases, create fairer and more accountable algorithms, and code definitions of fairness into the design of data systems (e.g., Albarghouthi & Vinitsky's (2019) as a form of "fairness-aware programming". Others have focused on the explainability of algorithms, for example exploring the possibilities of explainable AI ("xAI") for enabling human comprehension of how automated decision-making systems reach decisions, and thereby rendering them more trustworthy, contestable and, ultimately, accountable (Mittelstadt et al., 2019; Wachter, et al., 2018). Barocas et al. (2020) highlight that explainable AI is gaining traction even within industry circles.

However the limitations of an approach that focuses on system failures and correcting bias in computational processes are also becoming apparent, and a growing range of scholars have highlighted the significance of social context and structures in relation to automated decision-making (e.g., Katell et al., 2020; Green, 2020). Brown et al. (2019) have argued that a better understanding of affected communities' concerns is fundamental to realising algorithmic accountability. Their study of datafied child welfare services found that technical interventions to achieve fairness by design and auditing are "in and of themselves insufficient for ensuring that resulting algorithmic systems are perceived as fair and just", and they suggest that technological solutions must work in tandem with broader policy changes (ibid., p. 10). Katell et al's 'Algorithmic Equity Toolkit' aims to expand algorithmic accountability by understanding algorithmic discrimination as "a product of societal inequity rather than as solely a result of inaccurate performance by models or under-representative training data" (Katell, et al., 2019; 2020: 46). The Toolkit was created through participatory design and action methods with Seattle community members in order to foster more empowered advocacy and decision-making.

Further, researchers have begun to critique the logic underpinning algorithmic accountability, with some arguing that computer science concepts such as abstraction and modular design allow programmers to fall into the traps of abstract analysis and thereby divorce fairness from the social context in which an algorithm will be deployed (Selbst, et al., 2019). Hanna et al. (2020) problematise the way in which algorithmic accountability methodologies adopt a conceptualisation of race as a fixed attribute and so fail to attend to the socially constructed nature of race, which, they argue, "can serve to minimise the structural aspects of algorithmic unfairness" (ibid., p. 2). Finally, several researchers have disputed the epistemic claims of algorithmic accountability which extend the logic of what Green and Viljoen (2020) call algorithmic

formalism by treating fairness as a metric and failing to provide the methodological tools "necessary to fully identify and act upon the social implications of algorithmic work" (ibid., p. 20). Elsewhere, Green has argued for the need for "epistemic reform" to counter the limits of algorithmic fairness, particularly its narrow concern with human bias, which Green finds individualistic and legitimising compared with the broader objective of substantively transforming population inequity (Green, 2020: 603).

The crisis of democracy

If technical solutions to the problem of accountability are facing limitations and if - as we claim in this research - the datafication of society has broader democratic implications, a perspective on democracy and participation outside the realm of data analytics is required to situate datafication in its social and political context. In this respect, many observers point to serious problems of the current state of democracy. Prominent concerns include increasing "polarisation, populism, and pessimism" (OECD, 2020, p. 20), social disconnectedness and "a dissatisfaction with elites running things on the public's behalf" (Breckon, et al., 2019, p. 4). Patriquin notes there is minimal satisfaction with democracies in the West as citizens feel abandoned by political elites (Patriquin, 2020: ix). The Open Government Partnership, in a 2019 report, claim the promises of the ballot box often fall short, with citizens perceiving their elected governments to be unresponsive to their needs, or corrupt and captured by special interests (Open Government Partnership, 2019, p. 2). Fung & Wright assert that political representation is ineffective in facilitating active political involvement of the citizenry and that core institutions of the democratic state are no longer seen suitable to achieve social justice and economic well-being (Fung & Wright, 2001).

Popular literature has discussed, e.g., How Democracy Ends (Runciman, 2018) in exploring what is perceived as a contemporary and worsening crisis of democracy, resulting from a variety of factors - from complacency to the proliferation of social media. Claims of a crisis of democracy have been raised before and have addressed different and often contradictory dimensions, from overly bureaucratic political systems (Crozier et al., 1975) to a deficiency of democratic processes. However contemporary analysis combines different diagnoses, incl. high levels of citizen disaffection with politics, a lack of political literacy, low levels of trust in governments and politicians, and the decline in membership of political parties, among other factors, towards a mosaic of democratic crises that further problematize the democratic implications of data systems (Ercan & Gagnon, 2014).

Participation

At the core of the democratic principle, as well as its recent challenges, lies the concept of participation. Yet in its different iterations, from grassroots movements to institutional forms and to wider practices of deliberative democracy (Pateman, 2012), it has come to mean different things to different people and is therefore worth unpacking. As Carpentier (2016) notes, there is "hardly a consensus on how participation should be theoretised", a "considerable vagueness on how participation should be researched", and "debate on how participation should be evaluated" (ibid., p. 70). To start with, and following Carpentier, we may distinguish a sociological approach and a political (studies) approach:

> The sociological approach defines participation as taking part in particular social processes, a definition which casts a very wide net. In this approach, participation includes many (if not all) types of human interaction, in combination with interactions with texts and technologies. … In contrast, the political approach produces a much more restrictive definition of participation, which refers to the equalisation of power inequalities in particular decision-making processes … Participation then becomes defined as the equalisation of power relations between privileged and non-privileged actors in formal or informal decision-making processes. (Ibid.: 70-72)

Pateman (1970) highlights the importance of power and influence in assessing different forms of participation. A seat at the table of decision-making processes without actual decision-making power would therefore be "pseudo participation". Being able to influence a decision, according to Pateman, would be "partial participation" but still "not the same thing as to be in a position to … determine the outcome or to make that decision" (Ibid.: 68-69). "Full participation", in contrast, would consist of "a process where each individual member of a decision-making body has equal power to determine the outcome of decisions" (Ibid: 71). While Pateman was mainly referring to the workplace, her thinking has been adapted to other contexts. The focus on industry contexts also illuminates her distinction between "participation" and "democracy", stating that we may find ourselves with participation in a given system but without democracy: "Not only is it possible for partial participation at both management levels [higher and lower] to take place without a democratisation of authority structures, but it is also possible for full participation to be introduced at the lower level with the context of a non-democratic authority structure overall" (Pateman, 1970, p. 73). This perspective points us to the centrality of political and institutional structures and to the broader goals and motivations of engaging the public: Does this engagement involve an actual transfer of power? What is the shape and degree of influence that is conveyed to citizens and communities? Or is participation closely limited and thus to be understood as a management or PR tactic - "participation washing" - rather than the delegation of power?

Arnstein's "ladder of citizen participation" has been influential in operationalizing these distinctions (Arnstein, 1969). Like Pateman, she moves beyond a general and seemingly non-controversial notion of participation to explore its role in political and economic power.

> … citizen participation is a categorical term for citizen power. It is the redistribution of power that enables the

> have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future. It is the strategy by which the have-nots join in determining how information is shared, goals and policies are set, tax resources are allocated, programs are operated, and benefits like contracts and patronage are parcelled out. In short it is the means by which they can induce significant social reform which enables them to share in the benefits of the affluent society. (Ibid., p. 216)

As Arnstein states, "There is a critical difference between going through the empty ritual of participation and having the real power needed to affect the outcome of the process" (Ibid.). She offers a typology of eight rungs on a ladder of citizen participation, from manipulation at the bottom up to citizen control. From bottom to top, she provides three meta-categories: nonparticipation (manipulation, therapy), degrees of tokenism (informing, consultation, placation), and degrees of citizen power (partnership, delegated power, citizen control) (Ibid.: 217). These amount to a spectrum of participation, from "empty ritual" up to "real power".

As Arnstein explains, "nonparticipation" (the bottom two rungs of the ladder) is characterised by the objective of power holders to educate or "cure" participants rather than to genuinely enable them to participate in government programmes (ibid). For Arnstein "tokenism" is what is being offered to participants when power holders provide opportunities for have-nots to be informed or consulted (rungs three and four of the ladder), essentially allowing have-nots "to hear and be heard" but ultimately maintaining the status quo since participants lack the power to insure that their views are actually implemented or result in change. The highest level of tokenism is "placation" (rung five) whereby participants may have an advisory role but power holders still maintain the right to decide (ibid). More citizen power is granted through "partnerships" that enable participants to negotiate with power holders (rung six) but Arnstein argues that meaningful citizen power is not granted until "delegated power" (rung seven) or "citizen control" (rung eight) enable have-not citizens to exercise full managerial or decision-making power (ibid).

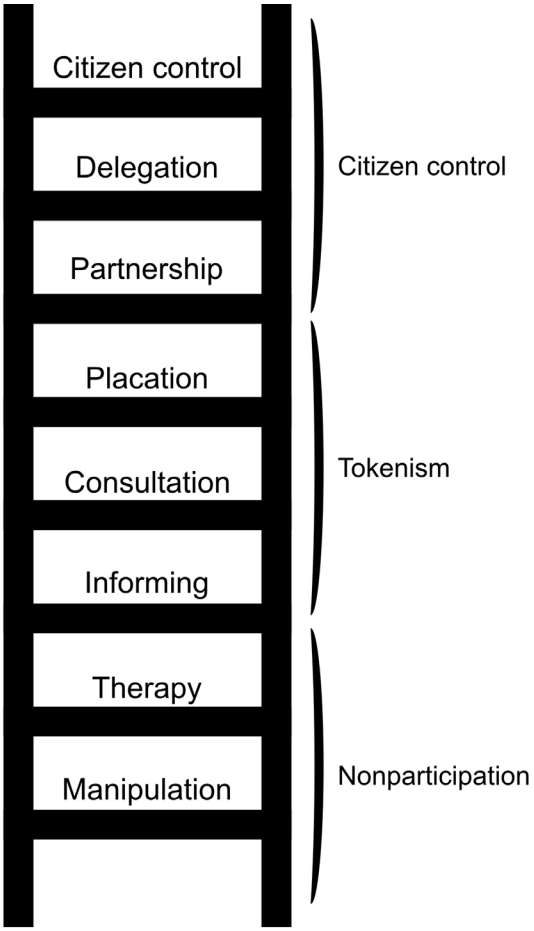


Figure 1: Arnstein's ladder.

Arnstein herself recognised limitations to this model, including the rather simplistic juxtaposition of powerless citizens and the powerful as homogeneous blocs. Yet she notes that "in most cases the have-notes really do perceive the powerful as a monolithic "system", and powerholders

actually do view the have-nots as a sea of "those people," with little comprehension of the class and caste differences among them" (Arnstein, 1969, p. 217). She highlights that the ladder does not include an analysis of the "most significant roadblocks to achieving genuine levels of participation", and cautions that the separate rungs on the ladder are not as tidy and differentiated as they may be presented (Ibid: 217-218).

Carpentier builds upon these reflections, adding that not only can the distinctions between rungs blur, but that "participatory intensities can change over time", can be subject to struggles within the process itself, can "conflate the participatory and the critical", and the ladder approach can "black box" notions of power, leaving them under-theorised (Carpentier, 2016, p. 76-77). Carpentier offers an alternative in the form of a multi-leveled analytical model with a series of analytical steps (focused on media participatory processes) that looks at the process itself and its field as well as the actors, decisions, and power relations that constitute a particular participatory process (Carpentier, 2016, p. 75-84). Taking the process and its field as a starting point allows for a restricted but detailed analysis of the specific occurrence of participation, while also foregrounding the specific field(s) - media, cultural, familial, political, economical etc. - which a participatory process is situated within, and an analysis of the basic characteristics of this field. This leads to an examination of the knowledges, positions, interests, stakes, commodities and histories that construct the field, together with how the exact relationships between the participatory process and the field are organised.

The model further requires attention to the actors involved in the participatory process; their material positions, identities and roles; decisions and 'decision-making moments'; and power relations (incl. generative, restrictive and resistant aspects of power).

Power positions of the actors are compared, with particular focus on those of privileged and non-privileged actors. Noting that the "structuring question is how equal the power relations are in the entire participatory process" (ibid, p. 83), Carpentier seeks to identify "particular areas of power-sharing while other decisions are taken by privileged actors" (which he labels "participatory pockets").

These approaches problematize established meanings of participation, explore nuances and operationalize them as analytical categories. The investigate the social, political and economic context of participation and draw attention to both actors and institutions. As Chilvers et al. (2018) note, the "burden can no longer only be placed on publics to participate, but should equally be placed on institutions to account for the relevance of diverse publics and forms of participation across socio-technical systems" (p. 209).

Democratic innovations

In response to the deficiencies and potential crises of democracy, and specifically shortcomings in wider public participation, interest has been emerging in how to enhance the participatory and deliberative qualities of democracy. Cox, for example, claims "the roots of our contemporary democratic crisis lie in the very narrow ways in which we have come to conceive of our democratic rights and activities," going on to suggest that democratic innovation is the answer (Cox, 2020). Smith, in his seminal book Democratic innovations: designing institutions for citizen participation, defines democratic innovations as,

> Institutions that have been specifically designed to increase and deepen citizen participation in the political decision-making process (Smith, 2009, p. 5)

These would, according to Smith, "take us beyond traditional modes of institutionalised engagement, namely competitive elections and consultation exercises" (ibid., p. 6). He offers four categories of democratic innovation: popular assemblies, mini-publics, direct legislation, and e-democracy (Smith, 2009: 28-31). Baiocchi & Ganuza (2017) suggest that

> Democratic innovations cover a wide range of instruments: participatory budgets, citizen juries, deliberative surveys, referenda, town meetings, online citizen forums, e-democracy, public conversations, study circles, collaborative policy making, alternative dispute resolutions, and so on. (ibid., p. 39)

Escobar & Elstub claim that democratic innovations is a useful concept because it "carves up space to overcome a series of dualisms", such as between participatory and deliberative democracy, representation and other democratic practices, politics and policy, state and civil society, and between normative and empirical concerns (Escobar & Elstub, 2017b: 3-4). It constitutes the latest incarnation of a continuing interest in strengthening the democratic features of society and enhancing people's voices, ranging from debates on participatory democracy in the 1970s and deliberative democracy in the 1980s and 90s to a more recent normative revival in democratic theory (Boeker & Elstub, 2015). Escobar & Elstub (2017b: 2) claim the "new field [of democratic innovations] stems from the confluence of a range of practical and theoretical projects advancing the critique and development of democracy throughout the 20th Century", with the label "democratic innovation" more recently galvanising a burgeoning academic field built upon notable publications, both academic and popular (e.g. Escobar & Elstub, 2019; Fishkin, 2018; Arriaga, 2014; Smith, 2009; Hendricks, 2011; Geissel & Newton, 2012).

Democratic innovations tend to be positioned in contrast to representative democracy and electoral politics, offered either as an enhancement by patching over the latter's flaws, or as an alternative to established democratic systems (Escobar & Elstub, 2017b). However they do not necessarily reject existing democratic institutions and thus established features of the political system. Pateman contrasts this approach with the democratic theory of the 1960s "where the meaning of democracy itself - "realistic" or participatory? - was at the heart of the debate" (Pateman, 2012, p. 10). Some initiatives under the banner of democratic innovations may be characterised as what Warren (2009) calls "governance-driven democratisation"; a technocratic approach of incorporating participatory aspects in strategies to render governance more effective. Using an intersectionality

framing, Wojciechowska argues that,

> democratic innovations usually focus on one, separate identity category at a time. Indeed, some democratic innovations are even identity-blind. As such, participatory and deliberative institutions at present are explicitly exclusionary towards the experiences and oppression of members of many disempowered groups. (Wojciechowska, 2019a: 2)

While there may not be a single and widely adopted typology of democratic innovations, the debate points to a perceived need for strengthening democratic participation and the particular centrality of deliberation (Carson & Elstub, 2019). As Pateman notes, "deliberation, discussion, and debate are central to any form of democracy, including participatory democracy, but if deliberation is necessary for democracy it is not sufficient." (2012: 8).

Participation & data

Previous research (Dencik, et al., 2018; Gavaghan, et al., 2019; Algorithm Tips, no date) has highlighted the use of privately and publicly developed data systems by public authorities, provided detailed overviews of their use, and pointed to limitations in democratic accountability. Writing in a Dutch context, van Zoonen applied the notion of an "institutional void" to describe the lack of social and political debate about big data in social policy, with an important background being the "lack of public visibility and a democratic mandate for data transitions in social policy" (van Zoonen, 2020: 4). Where and how, then, is the public able to influence the use of data technologies?

The nexus of participation and technology has been approached from two different directions. One is concerned with the use of data technologies to facilitate participation, the other with public participation in decision making on the use of data technologies. Referring to slightly earlier debates, Carpentier (2011) identifies "two interrelated forms of participation" as "participation in the media and through the media". Through refers to participation where the "media sphere serves as a location where citizens can voice their opinions and experiences and interact with other voices", whereas participation in the media "deals with participation in the production of media output (content-related participation) and in media organisational decision-making (structural participation)" (Ibid.: 67-68). We can relate this distinction with participation to data technologies where we see an abundance of discussion of participation through data technologies but less, so far, on participation in data technologies, i.e. in decisions regarding their development and deployment.

In the area of the former we can consider fields and topics ranging from 'Public Participation Geographic Information Systems' (Sieber, 2006; Hanzl, 2007) and early discussions of the democratic potential of social media platforms such as Twitter (Christensen, 2011; Morozov, 2012), to E-Government (Twizeyimana & Andersson, 2019) and studies of ambitious digital participation platforms such as decidim.barcelona (Peña-López, 2019; Aragón, et al., 2017). Some have reflected on how big data could be used by citizen participation initiatives (Bright & Margetts, 2016), and on the potential impacts of artificial intelligence for political participation (Savaget, et al., 2018). Others have noted the advantages and disadvantages of digital routes to public

engagement and their increasing prevalence (Latta, et al., 2013). More recently, the field of data activism research has significantly advanced knowledge about the use of data by social movements and civil society for a range of progressive purposes (e.g., Milan, 2017). These important areas of study intersect with our interest in participation and datafication, but they speak to a different set of questions.

Participation in decision making on the use of data technologies has received less scholarly attention. However we can observe an emerging interest in this question. Policy institutions such as the Royal Society for Arts, Manufacture and Commerce (RSA) have recommended further experimentation in the area of democratising decisions about technology, highlighting the need to involve the public in decisions around automated decision-making systems, in particular (RSA, 2019). They underline "the need to embed forms of deliberation in the development of technology policy and governance including in major tech companies themselves" (Ibid.: 13). The UK Centre for Data Ethics and Innovation (CDEI), similarly, emphasises the importance of engagement with local citizens in the governance of new technologies. They highlight polling which suggests 50% of people "would be interested in engaging with their local authority to give their opinion on how data should be used to make decisions" (CDEI, 2021, p. 28). The civil society organisation Involve states that "the public needs to have the opportunity to contribute to discussions about the appropriate uses of data" (Adams & Burall, 2019, p. 3), proposing methodologies including citizens juries, citizens panels, and distributed dialogues. The foundation Nesta, in work on "participatory futures", claim that new and innovative models of civic participation are necessary that go significantly beyond "conventional public engagement techniques, such as surveys and town hall meetings, which regularly fail to enthuse people to participate and can be seen as tokenistic rather than leading to real change" (Ramos, et al., 2019). Van Zoonen (2020) concurs that methods for public participation in data governance rarely go far enough, and points to "civic initiatives and voluntary networks [which] have been set up, for instance via café meetings for the unemployed, application platforms, and city rooms. Together, they give shape to the participation forced into existence by the ideal … of a participatory society" (van Zoonen, 2011, p. 11).

As these examples show, the need for enhanced participation in, and deliberation on, the deployment of data systems is increasingly articulated by scholars, policy institutions and citizens, but so are the shortcomings and limitations of institutional efforts which, so far, may not address all affected communities and often offer limited decision-making power. As Patel and Peppin (2020) note, following a number of "Community Voice" workshops run by the Ada Lovelace Institute:

> Those we spoke with felt strongly about the importance of public participation: people want to and have the right to engage with and shape decisions about technologies that have huge social impact. There are a wide range of ways through which this can happen - through deliberation such as citizens juries, and through involving Black, Asian and minority ethnic, LGBTQI and disabled people in the design, development and deployment stages of technologies.

As their contribution demonstrates, the necessary conditions for effective participation include the willingness to engage, but also the possibility for affected communities to be involved and have their say, and the sharing of relevant knowledge

about data technologies. Recommendations by Jacobs, et al. (2020) in their work on smart cities may be exemplary here as they highlight the importance of considering how the visions and realities connected with technology "might be experienced by all social actors; not just those involved in leading these initiatives but those impacted, directly and indirectly, within the community and at all levels" (p. 2), and the need for public bodies to provide knowledge "for individuals and communities [which] will aid in the facilitation of transparency and assist in gaining access to information that they may otherwise not realise might be necessary" (Ibid.: 7).

This initial overview of relevant themes and debates may serve as a broad thematic context and starting-point for the issues addressed in this report. It is by no means comprehensive but points to some of the debates which are emerging in this field and offers a background for the more detailed investigations in the following chapters. Each of these chapters will begin with a separate contextual section to explore specific debates (and academic literature) in more detail.

Methodology

Research aims and scope

In order to investigate avenues for civic participation in the datafied society this project was initially divided into four separate work streams that were expanded to six thematic areas over the course of the research period. Each constitutes a potential space where participation occurs and could be strengthened, and thus each serves as a separate line of enquiry. The six thematic areas are: 1) Institutional dynamics and responses, 2) models of civic engagement and democratic innovation, 3) oversight and advisory bodies, 4) civil society strategies, 5) alternative imaginaries and infrastructures, and 6) data literacy.

We have sought to understand the range and depth of civic participation by a) mapping key practices, opportunities and challenges, and b) exploring these in depth through document analysis and conversations with stakeholders. The primary geographic and administrational focus has been on the UK, the country where the Data Justice Lab is based, but we included examples from across Europe and North America within some of the case study investigations.

Research approaches

The research approach for this project has varied according to workstream and thematic area. For theme 1), we adopted a case study approach, entailing in-depth studies of organisational responses to live facial recognition and risk-based verification. For the other themes, we critically mapped key examples of models, strategies or institutions (depending on the theme) and investigated relevant issues through interviews with protagonists.

This involved different steps that were taken, and different methods that were applied, in the research process:

1) Desk research
2) Fact-finding workshop
3) Document analysis
4) Field work
5) Interviews

Desk research

We established the key themes and practices within each workstream as well as potential case studies and interview contacts through online research and scoping reviews of relevant academic studies and non-academic reports.

For theme 1) we identified institutional efforts to engage the public and examined responses to the need for further public involvement as well as relevant political contexts. Following the decision to pursue a case study driven approach, we focused on the use and non-use of risk based verification and live facial recognition. While the original question of our inquiries concerned the opportunities for public interventions in decision making around the deployment

of data systems, early research uncovered a general lack of public influence, which re-focused this theme to an investigation into the absence of democratic opportunities.

Research on theme 2) began by scoping the state of participatory and deliberative politics. Literature on democratic innovations and mini-publics provided necessary background information on different democratic methods and their implementation. Theme 3) evolved more organically from a review of the institutional ecology and their practices and from workshop and interview findings.

For theme 4) we scoped the UK civil society landscape for the most prominent actors in relation to participation and datafication, and then reviewed further relevant examples in, particularly, North America and Europe. This process identified a number of strategies pursued by civil society organisations advocating on behalf of citizens.

Work on theme 5) began with a review of groups and projects that have resisted, or proposed alternative visions of, datafied society. Theme 6) explored and categorised existing tool-based approaches to data literacy.

Fact-finding workshop

The Data Justice Lab held an international multi-stakeholder workshop at Cardiff University's School of Journalism, Media and Culture (JOMEC) on 7th June 2019. The event brought together more than 30 participants from organisations across government, civil society and academia, mostly from the UK but including the US, Canada, Spain and Iceland. The purpose of the workshop was to explore different perspectives on civic participation in data driven decision-making and the challenges within different governance models. It was divided into three sessions that investigated key dimensions of the project: Involving the Citizen, Institutional Practices and From Infrastructure to Advocacy: Citizen Interventions. Prominent themes that emerged during discussions included the limits of rights-based approaches, the potential of collective governance models, the importance of involving affected communities, and the problem of a lack of public knowledge. While a significant part of the debate focused on the potential of specific models and practices, such as mini-public processes, for strengthening democratic engagement, a strong perspective emerging from the day was that a wider restructuring of society would be required to bring about truly inclusive data governance.

Insights from the workshop focused our research questions and informed our interviews and case studies.

Document analysis

Research for this project involved the analysis of a wide range of reports, policy documents, toolkits, campaign literature and literacy materials.

For theme 1) we focused on our two case studies, investigating government documents, from central government bodies such as the Department for Work and Pensions (DWP) and national commissioners like the now defunct Surveillance Camera Commissioner, to local government minutes and materials from regional bodies such as Police and Crime Commissioners.

Work on theme 2) involved the review of a wide range of reports, papers, toolkits, and other literature relating to democratic innovations and specific cases of, e.g., citizen assemblies and citizen juries. Media reports were useful in gauging the reception and impact of various democratic exercises. Theme 3) required a focus on institutional documents by oversight bodies as well as civil society recommendations for institutional reform.

For theme 4) we analysed materials relating to relevant civil society campaigns and legal challenges including blog posts, investigative reports, submissions to government consultations and proposals for policy reform. Campaigns that provided a rich set of documents included, e.g., the ACLU's Community Control Over Police Surveillance (CCOPS) campaign, Participation and the Practice of Rights' (PPR) work on Suspect Communities, Against Borders for Children and Defend Digital Me's school census boycott, and Migrants' Rights Network's challenge to data sharing under the government's Hostile Environment policy. This analysis provided an overview of key strategies being employed by civil society. Further, we analysed research reports from civil society organisations including Computer Says No by Child Poverty Action Group and Doteveryone's "responsible technology" research.

For theme 5) we explored literature produced by social movements such as The Alliance for Inclusive Algorithm's Call To Action and the MyData declaration, as well as strategy documents such as Barcelona City Council's Technological Sovereignty Guide and We Own It's report on public ownership. This analysis showed the key concepts and imaginaries being constructed by social movements, such as big data abolition, technological sovereignty, community wealth building, public ownership, affirmative action for algorithms and citizen-centric control.

Finally, research on theme 6) involved documentation relating to literacy tools, encompassing descriptions of the tools themselves and publicity materials.

Field work

During the course of this project we participated in several events, taking field notes that helped inform our analysis.

For example, in March 2019 we attended a citizens jury on the topic of AI explainability in Manchester, commissioned by NIHR Greater Manchester Patient Safety Translational Research Centre and the Information Commissioner's Office, and run by Citizens Juries c.i.c. in collaboration with the Centre for New Democratic Processes. This helped inform our research on theme 2) by enabling us to observe a citizens jury in action and speak with its conveners and participants, offering us an impression of democratic innovation beyond its representation in the literature.

Interviews

We conducted 64 expert interviews.These were divided as follows:
Theme 1: 11 Interviews
Theme 2: 13 Interviews
Theme 3: 5 Interviews
Theme 4: 13 Interviews
Theme 5: 13 Interviews
Theme 6: 9 Interviews

On average, interviews lasted 45 minutes and most were carried out through video call (primarily due to the Covid-19 pandemic). Interview contacts were identified as key actors during the desk research and were selected according to their relevance for the project themes. For each of the six themes we created a standardised set of interview questions, although these were sometimes adapted depending on the interviewee and the specific line of inquiry.

For theme 1 we spoke with central and local government workers, incl. senior employees, as well as professionals from government agencies, although we met some reluctance, particularly on the part of police forces and related bodies, to engage in interviews. Further, we interviewed individuals from civil society and academia.

Across this report, we anonymise the interviewees but include their organisational affiliation in order to situate and contextualise them. This does not mean, however, that interviewees spoke with us in an institutional capacity. The views they conveyed to us are personal opinions, not institutional statements.

Organisation interviewed	Interviewee orientation
Anonymous	Local Authority
Bristol City Council	Local Authority
Royal Borough of Windsor and Maidenhead	Local Authority
Sunderland For Transparency	Local community advocacy group
Sunderland City Council	Local Authority
Hull City Council	Local Authority
Folkestone and Hythe District Council	Local Authority
Independent human rights lawyer	Human rights
Open Rights Group (Scotland)	Civil Society, digital rights
Big Brother Watch	Civil Society, digital rights
University of Stirling academic	Surveillance expert

Table 1: Theme 1 (Institutional Dynamics) interview sample.

For theme 2 we spoke with practitioners and experts who either commissioned or organised participatory and deliberative initiatives, or who provided relevant knowledge for running participatory events. These mostly included individuals from civil society, with some from government and private sector agencies. We explored questions of the requirements for successful participatory initiatives, their impact, and specific difficulties and opportunities for participatory initiatives relating to matters of data and artificial intelligence.

Organisation interviewed	Interviewee orientation
Ada Lovelace Institute (2 interviewees)	Civil society / Organiser
Citizens Foundation	Online participation tools
Citizen Juries CIC	Citizen jury facilitation
Digital Directorate, Scottish Government	Government
Information Commissioner's Office	Technology regulator
Involve	Civil society / Organiser
Ipsos Mori (2 interviewees)	Deliberative engagement services
Scottish Community Development Centre	Community participation services
Shared Future CIC	Participatory budgeting and facilitation services
University College Dublin	Academia / Organiser
University of Iceland	Academia / Organiser

Table 2: Theme 2 (Models of Civic Engagement) interview sample.

For theme 3 we interviewed five directors or senior staff of institutions that engage with data governance oversight, either as public bodies that are directly commissioned by government or as independent institutions that provide expertise. Interview questions addressed the roles and challenges of oversight bodies and the possibilities of civic participation. Organisations included:

Organisation interviewed	Interviewee orientation
Ada Lovelace Institute	Civil society
Centre for Data Ethics and Innovation	Government expert body
Information Commissioner's Office	Technology regulator
Royal Society of the Arts	Think tank
Turing Institute	Data science and AI research

Table 3: Theme 3 (Oversight and Advisory Bodies) interview sample

For theme 4 we spoke with civil society stakeholders who were selected on the basis that their organisation has pursued public engagement or public interest work in relation to datafication, or has worked on behalf of communities impacted by data driven decision-making. Our sample encompassed a range of civil society orientations including education, welfare rights, digital rights, migrant justice, patient data, technology policy and community activism. The interviews explored the strategies used to advance participation and advocate for citizen interests..

Organisation interviewed	Interviewee orientation
AI Now	Technology policy
Algorithm Watch	Technology policy
American Civil Liberties Union	Civil Liberties
Bits of Freedom	Digital rights
Child Poverty Action Group	Child welfare
Defend Digital Me	Education rights
DigiRights	Data rights
Doteveryone	Technology policy
Liberty / Schools Against Borders for Children	Human rights / Education Activism
MedConfidential	Health patient rights
Migrants' Rights Network	Migrant justice
Migrants' Rights Network	Migrant justice
Participation and the Practice of Rights	Welfare activism

Table 4: Theme 4 (Civil Society) interview sample.

For theme 5 we spoke with activist groups and individuals who have been prominent in resisting datafication or constructing alternative imaginaries of datafied society.

Interviews focused on activists' perspectives on the main challenges of datafication, strategies for engaging citizens, and visions for future datafied societies.

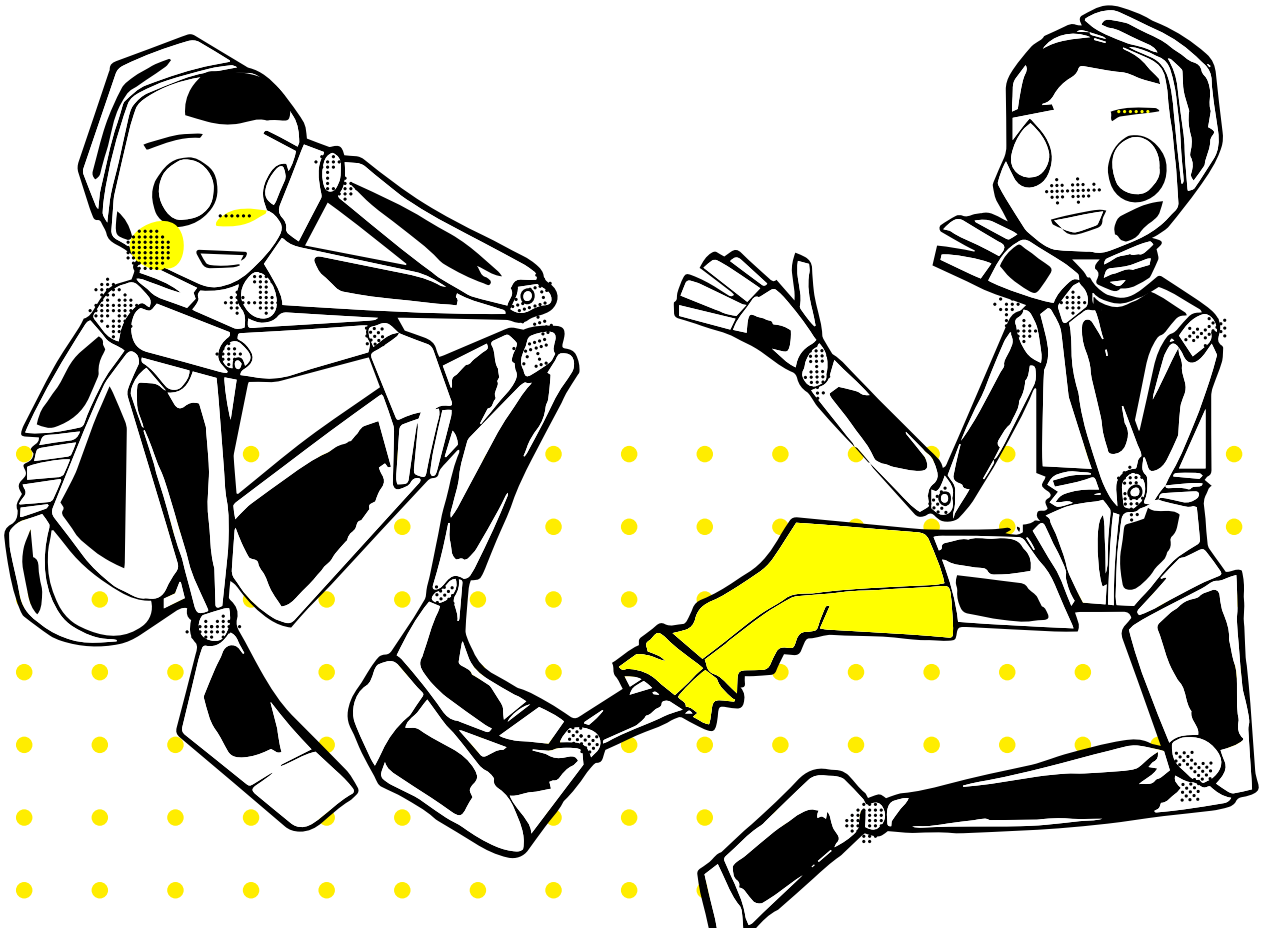
Organisation interviewed	Interviewee orientation
Ahora Madrid	Political party
Ahora Madrid	Political party
The Alliance for Inclusive Algorithms	Social movement
Barcelona City Council	Local authority
Centre for Local Economic Strategies	Think tank
Citizens Debt Audit Platform	Activism
Data 4 Black Lives	Activism
Internet Interdisciplinary Institute (IN3) (Interview A)	Public policy research (Decidim project)
Internet Interdisciplinary Institute (IN3) (Interview B)	Public policy research (Decode project)
MyData (Interview A)	Data activism
MyData (Interview B)	Data activism
Preston City Council	Local authority
We Own It	Public ownership advocacy

Table 5: Theme 5 (Alternative Imaginaries and Infrastructures) interview sample.

For theme 6 we interviewed nine creators of data literacy tools and initiatives, encompassing activists, academics, artists, film makers, community organisers and policy professionals. The types of tools included in the sample included two workshop resources, three interactive learning tools, two participation tools for algorithmic accountability, two in-depth guides to data rights and the data economy and one investigation tool. Our interview questions focused on exploring what drove the creators to make these resources, what audiences they address, and what potential data literacy has for strengthening participation.

Data Literacy Project	Interviewee orientation
Algorithmic Ecology	Activism
Algorithms Exposed	Academic research
Algorithm Tips	Academic research
Automating NYC	University students
Do Not Track	Film maker
Instagram Data Donation Project	Civil society
Me and My Data Shadow	Civil society
PreCrime: Predictive Policing Simulator	Documentary film production
UnBias Fairness Toolkit	Academic research and artist
Your Data Your Rights	Civil society

Table 6: Theme 6 (Data Literacy) interview sample.



01 Institutional Dynamics

Literature Review

The goal of the first research theme is to better understand the opportunities for civic participation with government decision making about uses of data and automated systems. This work was pursued through case study investigations of government decision making about uses of risk based verification and facial recognition technologies. It builds upon previous research into government uses of these systems as well as our own work investigating decision-making processes. This part of our research (and report) builds directly upon our previous project, "Data Scores as Governance: Investigating uses of citizen scoring in public services" which attempted to map the use of data scores and algorithms across the UK public sector (Dencik, et al., 2018).

In this section we offer a review, primarily, of recent UK civil society and government reports about uses of automated data systems with a focus on what this work says about oversight and public engagement.

Engin & Treleaven provide a taxonomy of areas of government where big data and blockchain are in use to provide an overview of developments in government uses of automation and data science. They aim to encourage the computer science community to engage with government to develop new services and support the work of civil servants (Engin & Treleaven, 2019). This work helps us gain a broad overview of the areas of government which are seen as possible sites of automation - some speculative, some already deployed - from "robo-advisors" supporting civil servants, chatbots, and automated case management systems, to behavioural and predictive analytics, and laws and statutes encoded as smart contracts on the blockchain.

Yeung examines the phenomenon of "algorithmic regulation" - "regulatory governance systems that utilise algorithmic decision making" (Yeung, 2017: 3). Her use of the term "regulation" refers to both public and private uses of algorithmic systems and tools. She explores algorithmic regulation's various guises through categories such as "fixed" and "adaptive", "real time" and "pre-emptive", etc., while critically reflecting upon debates surrounding these systems., Yeung highlights areas of concern and their capacity to conflict with principles of liberal democratic societies (Yeung, 2017). Yeung and Lodge's co-edited volume titled Algorithmic Regulation provides a needed overview of contemporary ideas on the topic (Yeung & Lodge, 2019).

Yeung urges caution, highlighting critical concerns relevant to public and private sectors. (Yeung, 2019).

Veale & Brass note a shift in recent years towards the "use [of] administrative data to build models with the purpose of helping make day-to-day operational decisions in the management and delivery of public services, rather than providing general evidence to improve strategy or government-citizen interaction", as had been a more primary focus in the recent past (Veale & Brass, 2019: 121). They investigate the drivers and logics behind the use of machine learning in the public sector, whether the use of machine learning in the public sector is a "smooth continuation" of e-Government, and how public management decisions and practises are enacted when machine learning solutions are implemented in the public

sector. They map and detail the management of machine learning systems in the public sector at different levels (macro, meso, and micro/street-level) while evaluating how this technology is framed and standardised across the sector. (Ibid.: 122). They distinguish between two main types of operational machine learning systems: automation systems - which attempt to increase the quantity or efficiency of routine public sector operations through computation" - and augmentation systems - which attempt to improve human decision making (Ibid.: 123-127). Writing on management at the "meso" level, they highlight the unavoidability of ambiguity in policy (made at the "macro" level) relating to the use of machine learning systems due to ministers and senior civil servants not generally dictating practical matters such as data sources and machine learning training parameters, which passes discretionary power, "or at the very least agenda-setting power", to lower level, meso bureaucrats (Ibid.: 133). Additionally, when systems are deployed at the micro/street-level, they can be put to various purposes (Ibid.: 138). This triple formulation of macro, meso, and micro/street-level could be used to conceptualise at which level public involvement should be introduced. For example, at the macro level of policy making, and/or the meso level of policy implementation, and/or the micro level of frontline service delivery.

Veale's 2019 report with The Law Society into the use of algorithms in the justice system of England and Wales considered a range of systems, from "hand-crafted" examples to those using machine learning. The report found "a lack of explicit standards, best practice, and openness or transparency about the use of algorithmic systems in criminal justice across England and Wales." The report recommends a National Register of Algorithmic Systems, among a number of other measures. The report also recommends the "engagement of broad stakeholders including civil society, academia, technology firms and the justice system more broadly" (Veale, 2019: 4).

Other work also highlights the use and impact of automated decision-making and data systems on specific areas. A February 2021 report by the Centre for Data Ethics and Innovation (CDEI), catalogued local government uses of data during the coronavirus pandemic. They posed a number of questions, such as whether the "apparent success with which local authorities have used data during the pandemic" will be sustained in the long run, or if desire and interest will fade as the emergency subsides (CDEI, 2021: 5). The report lists examples of uses of data but its core concern is with how practices have changed and how this might affect practice going forward (Ibid.: 5-6). The report identifies a number of challenges which it considers as "systemic in nature" and requiring "cultural shifts, legal changes and funding decisions that will improve over a period of years, not months" (Ibid.: 11). These challenges are comparable to some of those raised in the CDEI's earlier work (CDEI, 2020a). Elsewhere, the CDEI has investigated uses of facial recognition technology in the UK (CDEI, 2020b).

The Ada Lovelace Institute has carried out area specific investigations of the uses of data, such as their 2020 report "The data will see you now: Datafication and the boundaries of health" outlining the creation of an "Internet of Health." Towards the end of the report, posing a number of questions for future research and development, they ask, "What models of governance in an Internet of Health will give people greater influence over their own health, and over deployments and treatments for conditions they have?" (Ada Lovelace Institute, 2020a: 32). The Ada Lovelace Institute have carried out investigations into other public sector areas where data and algorithms are deployed or

considered for deployment, such as vaccine passports and COVID status apps, as well as cataloguing public attitudes towards facial recognition (Parker, et al., 2021; Ada Lovelace Institute, 2019). The Ada Lovelace Institute has a workstream focusing on algorithmic accountability.[1] The Institute's Citizens' Biometrics Council ran a citizens assembly and a number of workshops over 2020 on AI and data driven biometrics technologies, and in May 2020 they organised a rapid, online public deliberation on COVID-19 related technologies (Peppin, 2020; Ada Lovelace Institute, 2020b).

Defenddigitalme take a more subject focused approach, with their "The State of Data 2020" report mapping a child's digital footprint as they grow up through England's state education landscape (Defenddigitalme, 2020). Their report makes a wide range of recommendations and highlights gaps in oversight, transparency and accountability. They call for independent oversight for education data and for this to include public engagement (Ibid.: 30).

Taking a normative approach and providing an example from beyond the UK, a report by the Citizen Lab at the University of Toronto focuses on the impact of automated decision-making in Canada's immigration and refugee system from a human rights perspective, highlighting how "the use of algorithmic and automated technologies to replace or augment administrative decision-making creates a laboratory for high-risk experiments within an already highly discretionary system." This report is primarily concerned with the welfare of individuals within Canada's immigration and refugee system, and how they may encounter "forms of bias, discrimination, privacy breaches due process and procedural fairness issues, among [other issues]." It also focuses on "current and proposed uses of automated decision-making", calling for a "critical human rights analysis". The report makes a number of recommendations, including calling upon the Canadian authorities to publish "a complete and detailed report … of all automated decision making systems currently in use within Canada's immigration and refugee system" along with a cessation of all efforts to procure, develop, or adopt new systems until appropriate and transparent oversight and government mechanisms can be implemented (Molnar & Gill, 2018: 1-2).

Algorithm Watch and Bertelsmann Stiftung's 2020 "Automating Society" report into automated decision-making (ADM) systems across Europe raises concerns about a lack of transparency around these systems. A startling finding in this report is that, while change happened rapidly regarding the deployment of ADM systems, the same is not true when it comes to the transparency of these systems. (Algorithm Watch, 2020: 7)

Their report makes a number of recommendations, including calls for the establishment of public registers for ADM systems, and the promotion of "an inclusive and diverse democratic debate around ADM systems" alongside enhancing of algorithmic literacy (Algorithm Watch, 2020: 11-13). The report includes a section on the United Kingdom which outlines developments and trends in the use of ADM systems here, including facial recognition and automated decision-making within the UK's EU settlement scheme (Algorithm Watch, 2020: 271-286)

Another report which focused on the role of ADM systems is that of New York City's Automated Decision Systems Task Force. The Task Force investigated the use of these systems across the city, and carried out some public engagement activities. It makes a number of recommendations, including some relating to public education and engagement (Automated Decision

1 https://www.adalovelaceinstitute.org/our-work/themes/algorithm-accountability/

Systems Task Force, 2019: 22-23). The Task Force has been criticised, including by a member of the Task Force itself, claiming that the report "reflects the city's view and disappointingly fails to leave out a lot of the dissenting views of task force members" (Lecher, 2019). The publication of the report was preempted with a "shadow report" prepared by a civil society coalition, providing its own recommendations and highlighting shortcomings of the Task Force (Richardson, 2019).

AI Now's 2020 volume on existing attempts to regulate biometrics systems from across the world opens by stating that "the future course of these technologies must - and will - be subject to greater democratic control" (Kak, 2020: 3). The volume's introduction notes a "critical juncture, perhaps even a turning point, in the trajectory of continued biometric expansion" in the last few years, with the problems of these systems - such as racial biases - being highlighted by research and civil society advocates (Ibid.: 11). Within the volume, Amba Kak highlights a key difficulty of democratically managing data systems:

> The focus on data as the object of regulation has also sometimes obscured the broader challenges to social and institutional practices that these systems and platforms exert on society, in which imperfect but established methods of accountability, contestation, and democratic decision-making are undercut by the introduction of opaque automated technology. (Ibid.: 17)

Kak highlights the growing role of community advocacy "in surfacing evidence of harm, and shaping the rights and protections that policy interventions eventually offer", with directly impacted communities organising push backs against systems. This work is in addition to the work of traditional privacy and digital rights groups. An example from New York is highlighted within the volume (Ibid.: 104-111). Kak's article highlights "the importance of community deliberation to the processes that decide whether these systems are used" (Ibid., 2020: 39-40).

From the other side of the equation, the UK Government's Office for Artificial Intelligence and Government Digital Service provide a document titled "A guide to using artificial intelligence in the public sector". There are recommendations pertaining to accountability and transparency, focusing on factors such as "explain[ing] to affected stakeholders how and why a model performed the way it did in a specific context," although in some cases, as with public private partnerships, such explainability is said to violate commercial interests. Governance is mentioned but only in reference to the team delivering the project (Office for AI & GDS, 2020: 42-43). What is absent from this work are recommendations relating to provisions which would bring the public into decision making processes. However, it should be noted, this document makes reference to The Alan Turing Institute's guide, "Understanding artificial intelligence ethics and safety", which does, in turn, make reference to public consultation in the context of Stakeholder Impact Assessments, although who is considered a "stakeholder" could affect who this would refer to (Leslie, 2019: 26-27).

The Office for AI report on procurement also lacks recommendations for enabling public influence over procurement processes. In a section titled "Assess the benefits and risks of AI deployment" it recommends to:

> Explain in your procurement documentation that the public benefit is a main driver of your decision-making

> process when assessing proposals. Consider the human and socio-economic impact and benefits of your AI system (Office for AI, 2020: 15)

While there are recommendations for the implementation of oversight mechanisms to allow scrutiny of AI systems, and there is a welcome recommendation to "Avoid Black Box algorithms" (Ibid.: 19), there is an absence of references to the public's role in oversight.

There is a need for more discussion of what role citizens can play in influencing decision-making around if and how automated decision making systems should be used.

Facial Recognition Case Study

With this case study we had three goals: 1) to better understand where and how facial recognition technologies are being implemented in the UK; 2) where opportunities do or do not exist for citizens to intervene in decision making processes relating to the use of facial recognition technologies by UK police forces and 3) what types of oversight mechanisms exist.[2] We also wanted to investigate if there were any regional differences in opportunities for citizen involvement that might be linked to England versus the devolved political contexts in Scotland and Wales. We did this by considering developments in police uses or non-uses of facial recognition technologies in London, South Wales, and Scotland.[3] We found that there are rarely any opportunities for citizen intervention into decision making surrounding facial recognition technologies, and when opportunities do exist they do not seem to go beyond run-of-the-mill online consultations.

Concerns in the UK

Facial recognition technologies aim to identify or authenticate individuals by comparing their faces against a database of (presumably: Hill, 2020) known faces. In the UK there are widespread and significant concerns about facial recognition and the negative impacts it could have. As the Centre for Data Ethics and Innovation (CDEI) highlights, there are concerns that using live FRT in public settings may undermine individual privacy; entrench bias and unequal outcomes, particularly where systems have different accuracy rates for different demographic groups; and give private and public organisations disproportionate power to surveil the population, potentially leading to the abuse of rights such as freedom of expression and association (CDEI, 2020). In addition, a 2018 Big Brother Watch investigation raised concerns over the low accuracy of the facial recognition systems they investigated, with an average of a 95% mismatch rate identified in their research. This means that up to 95% of those stopped by police as a result of a live facial recognition system were not a match of someone wanted by the police. They also suggest that facial recognition technologies could, absent an adequate public debate, expand to use of other databases of facial images, such as those for passports and driving licences, which could mean any person walking past a facial recognition camera, even those who have had no contact with the justice system, could be identified (Carlo, et al., 2018: 3-4; 21-23).

A large number of public bodies and researchers have called for either a halt to live facial recognition trials to allow for legislation and best practice to catch up, or an outright ban on facial recognition. For example the Equality and Human Rights Commission has called for "the suspension of the use of automated facial recognition (AFR) and predictive algorithms in policing

2 The research into government uses of risk-based verification systems and facial recognition technology was conducted between 2019 and 2021. Our analysis draws upon information gathered within this time period.
3 Other places in the UK where live facial recognition has been used, both by the police and private entities, highlighted by Big Brother Watch#, include (but may not be limited to): Hull (Hull Docks#), Leicestershire (Download Festival#), Sheffield (Meadowhall shopping centre#), Manchester (Trafford Centre#), by Waltham Forest Council#, Bradford (The Broadway shopping centre#), and Brighton (Amex football stadium#). Big Brother Watch also claim facial recognition has been used at Liverpool's World Museum and the Millenium Point conference centre in Birmingham, although in both instances the relevant police authorities have denied this.#

in England and Wales, until their impact has been independently scrutinised and laws are improved" (EHRC, 2020). While expressing support for the Black Lives Matter movement, Haringey Council voted to tell the Government, Metropolitan Police and the Mayor of London to keep facial recognition out of the borough (London Post, 2020). Similarly, the House of Commons Science and Technology Committee has called on the government to "issue a moratorium on the current use of facial recognition technology", and to halt further trials until a legislative framework and an oversight and evaluation system have been established (STC, 2019). Relevant for this study, the Committee also adds that "public engagement has been sorely missing from the Home Office's approach to date", and criticises the Home Office's 'consultation' on the governance of biometrics for not being robust enough (House of Commons Science and Technology Committee, 2019: 21).

In terms of civil society, the Ada Lovelace Institute has argued for the establishment of a "voluntary moratorium on future public and private sector deployment of facial recognition technology" (Kind, 2019). Further, they argue that public consultation and engagement must be a critical precursor to the adoption of data-driven technologies such as FRT, particularly to sufficiently tackle questions around bias and the impact of FRT on minoritised communities (Ada Lovelace Institute, 2019: 2). Amnesty International, Liberty and Big Brother Watch have all called for a ban, launching campaigns and citing concerns relating to mass surveillance, racial discrimination, and concerns about uses of FRT during peaceful protests (Amnesty International, 2020; Liberty website, 2020; BBW website, 2020). WebRoots Democracy, a London-based think tank, have called for a "generational ban", which they position between a moratorium and a total ban, ending police's use of live facial recognition technologies for "at least thirty to forty years" (Chowdhury, 2020: 37-39). Finally, Doteveryone called for ICO-led public dialogue events, a review, and the establishment of a "Responsible Facial Recognition Technology Coalition" with councils and cities as its members (Ohrvik-Stott & Miller, 2019: 4-7).

Oversight in the UK

The lack of effort by authorities to generate meaningful public debate is compounded by an underdeveloped legislative and oversight environment, making it more difficult for the public to be properly consulted or, preferably, brought into decision making processes. Up until recently there were three commissioners with remits that covered facial recognition: the Information Commissioner's Office, the Surveillance Camera Commissioner, and the Investigatory Powers Commissioner's Office (Ohrvik-Stott & Miller, 2019: 3). A new Biometrics and Surveillance Camera Commissioner has been announced to replace and merge the two formerly separate roles, but the Ada Lovelace Institute note concerns that merging these roles might weaken oversight, a particular concern when "the development of industry-wide standards and best practice is still a work in progress" (Rowe & Jones, 2020). In 2018, after a five-year wait, the Home Office published their Biometrics Strategy but this was criticised by the ex-Biometrics Commissioner, Paul Wiles, for not being forward looking or proposing "legislation to provide rules for the use and oversight of new biometrics, including facial images" (Wiles, 2018). Unfortunately, as it stands there are clear gaps in the oversight of facial recognition technologies in the UK, with practically no space for public voice or influence, despite repeated calls for more public involvement.

South Wales Police (SWP)

At the time of writing, South Wales Police list 69 live facial recognition deployments, ranging from code-named operations to deployments during sports matches to music events, a royal visit, and at least one protest.[4] South Wales Police have plans to integrate facial recognition into a smartphone app used by all its officers (Sample, 2019). They have spoken of the possibility of integrating the technology with existing CCTV networks (SWP, 28/02/2020). South Wales Police's live facial recognition capabilities are provided by Neoface Watch (SWP, 10/19), from IT multinational NEC (SWP, 28/022020). This system is integrated with Niche RMS, a popular records management system used by law enforcement across the world (SWP, 12/02/2018a). SWP's officers use a smartphone app, iPatrol, which can integrate with Niche RMS and Neoface facial recognition, a feature which South Wales Police are "working towards" (SWP, 2019a - NO DATE). SWP's deployments have received attention due to a legal challenge from Cardiff resident Ed Bridges, with help from the civil liberties organisation Liberty. The Cardiff resident believes he was scanned at the Cardiff DPTRE arms fair protest and whilst Christmas shopping (Liberty, 2018). Liberty claim this is the first legal challenge to this technology in the world (ibid).

In September 2019, the Cardiff high court decided that the use of the system was not illegal but did interfere with the privacy rights of those scanned by the system (Bowcott, 2019). The judgement recommended that steps be taken to codify "relevant legal standards" and that such a legal regime should be periodically re-evaluated (ICO, 2019b: 6). Lord Justice Singh granted the ability to appeal this decision, noting that the case "raises such issues of public importance and issues which potentially affect large numbers of people" (Porter, 2020b). In 2020, the Court of Appeal agreed with Liberty's submissions on behalf of Ed Bridges, overturning the September 2019 ruling. The court found that Bridges' right to privacy under article 8 of the European convention on human rights had been breached, as well as the Data Protection Act 2018. It also found that the force had not adequately investigated whether the facial recognition system exhibited any race or gender bias, breaching the public sector equality duty (PSED) (Ryder & Jones, 2020).[5] In response, the South Wales Police said they were confident that "this is a judgement we can work with", choosing to refine their policies rather than take the case to the supreme court (Sabbagh, 2020; Ryder & Jones, 2020).

Live facial recognition scrutiny, oversight, and public engagement in South Wales

In the following sections we assess the levels of scrutiny, oversight and public engagement in relation to South Wales Police's use of live facial recognition.

4 This occurred outside the DPTRE arms fair in Cardiff in March 2018 (Schmid, 2018).
5 Matthew Ryder QC and Jessica Jones' postmortem of the Court of Appeal's ruling highlights that the failure of SWP to comply with their PSED appeared at least partially to result from the force's inability to access information as to the potential race or sex bias of the underlying software used for their live facial recognition system because the software manufacturer (NEC) would not provide the data sets upon which the algorithms had been trained (Ryder & Jones, 2020).

SWP's Automatic Facial Recognition4 website

South Wales Police's automated facial recognition (AFR) website provides some details about the functions of their system, information on their deployments, and has a list of resources, including a manual of operating procedures (SWP, 2019a). The website[6] is structured to inform individuals of the system and provide responses to some common criticisms of live facial recognition. For example, in a FAQ section, a heading reads, "[Is] there a gender or ethnic bias in using [the] technology?". On the site South Wales Police claim there has been no evidence for bias over their 18 months of deployment, but the research cited notes there had not been detailed investigation of the impact of ethnicity and gender on accuracy rates (Davies, et al., 2018: 38 & 40-41). The 2020 court ruling also noted that SWP failed to properly investigate whether the system exhibited gender or racial bias (Liberty, 2020). The AFR website appears to focus on justification for and a defence of SWP's activities.

A more nuanced provision of information about FRT is needed to enable informed public debate on facial recognition. For instance it has been said by experts that "police forces needed to do more than simply place information on their websites" and that results of facial recognition trials should be made public (Biometrics Oversight and Advisory Board, 2019: p.4 & 6).

Public engagement: outreach

SWP's privacy impact assessment of FRT indicates that a "robust communication strategy has been developed to identify hard to reach groups". Open days are used as an example of community engagement and are pitched as child-friendly, family orientated events (SWP, 12th feb 2018: 13). On a number of occasions, SWP have opened their live facial recognition vans up for members of the public to look inside (e.g. Michael, 2019), and in February 2019 a representative from Liberty attended such a session.[7] In their Data Protection Impact Assessment, SWP cite these sorts of interactions as part of their strategy for community engagement, highlighting communication and social media strategies as ways to both inform the public and promote healthy debate. (South Wales Police, 11th October 2018: 27). Whilst welcome, open days, show-and-tells and social media posts do not provide adequate opportunity for public scrutiny. Silkie Carlo of Big Brother Watch reflected upon these activities in an interview with us:

> I asked South Wales to give us an observation too and said we would go up there and travel, but they were quite difficult to deal with and put it off significantly. Then eventually they offered me an observation at an air show in July 2019, so they were two years into using it at that point. […] I wanted to see something that was a bit more representative, like a rugby match, or a concert, or in the retail centre, for example, but they wouldn't do that.
>
> What was quite frustrating is that then at the same time […] they [would be] tweeting about "we've got our facial recognition van outside the Ed Sheeran

6 Automated facial recognition (AFR) is the terminology SWP use. In this document we have tended to use "live facial recognition". The two terms are interchangeable as best we can tell.
7 Private correspondence with the South Wales Police and Crime Commissioner's office.

> concert, come in, come and see what we're doing in the community". … You'll let 12 year old kids come and see what you're doing but you won't let human rights organisations? Why is that? (Carlo, 2021)

Oversight: Joint Independent Ethics Committee

South Wales Police's Joint Independent Ethics Committee is tasked with providing "advice, support and assistance concerning ethical challenges arising from operational, administrative or organisational matters facing South Wales Police"(SWP, 9/4/20).[8] Minutes from this committee refer to its deliberations, including relating to facial recognition (Joint Independent Ethics Committee, 2018a: 6). This committee is staffed and has a degree of care and attention afforded it. Meeting minutes detail significant discussion.[9] A challenge, from a public engagement perspective, is that the committee is held mostly behind closed doors and there appears to be limited opportunity for the public to provide any input. It is also difficult to judge the impact this committee has upon police practice. This is one specific area where there could be greater civic participation, transparency and accountability.

Oversight: Police Accountability and Legitimacy Group (PALG)

The South Wales Police and Crime Commissioner's (SWPCC) Police Accountability and Legitimacy Group (PALG) have been invited to live trials of facial recognition deployments.[10] On 21st June 2018 this group saw a presentation about live facial recognition from South Wales Police inspector Scott Lloyd and had the chance to ask him and other representatives from SWP questions (SWPCC, 2018: 5-6). Only a few representatives from a small number of organisations were present, including a representative from the EHRC. The minutes relating to the discussion of facial recognition indicate that the discussion was led by an inspector from South Wales Police who is at the heart of the force's use of live facial recognition (SWPCC, 2018). Groups like this do have a part to play but they must not be viewed as an adequate replacement for public oversight.

8 At the time of writing the committee is made up of a chair and vice chair who are professors of ethics and consumer law. The committee is also meant to be supported by at least three independent members. A representative of the Police and Crime Commissioner's Office, SWP's Chief Officer, and the Chief Superintendent all sit on the committee (SWP, 9/4/20). https://beta.south-wales.police.uk/police-forces/south-wales-police/areas/about-us/about-us/our-vision-values-and-ethics/ Archived copy: https://web.archive.org/web/20200409143047/https://www.south-wales.police.uk/en/about-us/visonvaluesandethics/

9 Some minutes were unavailable to us at the time of writing.

10 No members were able to attend (South Wales PCC, 12TH JUNE 2019: 2).

Oversight: South Wales Police and Crime Commissioner (SWPCC)

The South Wales Police and Crime Commissioner is tasked with oversight of policing practices. It is from this office that the PALG is run and core aspects of this role include public engagement and holding the Chief Constable of South Wales Police to account. There are few opportunities for the public to engage with this office. In our research we were met with issues such as missing minutes, limited public information, and difficulty finding out how this system of oversight worked in practice as related to deployments of FRT.

Central government influence

We highlight central government influence as it was a finding to emerge from both the RBV and FRT case studies. In the case of FRT, research suggests that the Home Office is encouraging police forces to use FRT by providing funding and resources. In 2016/17, SWP received £800,000 from the Home Office's Police Transformation Fund for live facial recognition (Home Office, 2017). One condition of this funding was that an independent evaluation be carried out, which led to Cardiff University's Police Science Institute report (Davies, et al., 2018: 9). Further, the Home Office set up the Law Enforcement Facial Images and New Biometrics Oversight and Advisory Board under their 2018 Biometrics Strategy (Home Office, 2018: 13; Wiles, 2018). The webpage for the oversight and advisory board does not list anyone from South Wales Police as a formal member but minutes indicate they have been in attendance (e.g. Biometrics Oversight and Advisory Board, 2019: 2). By providing funding the Home Office is indicating support for FRT and catalysing its use.

In summary, we find little opportunity for public involvement in decision making about the use of FRT and very limited transparency about oversight processes in South Wales. There is a need for more independent scrutiny and public involvement in decision making.

London Metropolitan Police Service (MPS)

Like South Wales Police, London's MPS have used live facial recognition extensively. The MPS also uses NEC's Neoface (MPS website, 2020) and has stated it has progressed beyond trials of FRT to operational use (Gayle, 2020). MPS's trial deployments included "two at Notting Hill Carnival, one at the national Remembrance Sunday event, one at Port of Hull, two at Stratford Westfield, two in Soho, and two in Romford" (NPL & Metropolitan Police, 2020: 7). MPS's deployments have tended to take place outdoors "with a free flow of subjects towards the cameras, which were either mounted on street furniture or on a van and set up specifically for the duration of the deployment". The database of faces the system was attempting to match against "primarily comprised individuals who were 'Wanted Missing' for a range of different offences." This database contained over 2000 individuals' faces by the end of the Met's trial period (NPL & Metropolitan Police, 2020: 16). In 2020, going into the period of operational use, the Met stated that watchlists were "to be created not more than 24 hours prior to [a live facial recognition] deployment" and that "checks are carried out to ensure the information is current and [the] person on the watchlist remain[s] of interest to the [Metropolitan Police Service]" (Ephgrave, 2020: 10).

Public Facing Information and Outreach

In 2019, researchers from the University of Essex published an independent report into MPS's live facial recognition trials. This report highlights that no detailed information was published in relation to MPS's use of live facial recognition prior to 15th July 2018, two years after the first trial in August 2016, with a total of five trials having taken place by this date (Fussey & Murray, 2019: 63). This is concerning, particularly in light of the Surveillance Camera Commissioner's Code of Practice which states transparency and accountability are "key elements of public interest when operating AFR in public places" (Surveillance Camera Commissioner, 2019b: 13).

The Met's 2018 Data Protection Impact Assessment (relating to their trials; predating their "operational use"), makes reference to a "stakeholder engagement strategy … developed in order to both identify key stakeholders and formulate an effective means of communicating and developing trust and confidence in [live facial recognition] technology and its application as a police tactic" (Metropolitan Police, 2018: 17). The University of Essex report notes that civil society groups such as Liberty and Big Brother Watch were included in these engagements, but that representatives expressed scepticism about the effectiveness of these interactions. Hannah Couchman is quoted in the report, she says 'We don't consider ourselves part of that stakeholder group'". Big Brother Watch's Silkie Carlo said the engagement by the Met was "responsive rather than proactive" (Fussey & Murray, 2019: 63). When speaking with us, Carlo said that any minimal transparency that has been achieved is due to the proactive efforts of civil society organisations. Carlo's concern is that "getting that minimal amount of transparency has been like getting blood from a stone." Further, Liberty told Essex University researchers "we think there's a real lack of public understanding and public engagement. […] How you inform the public is important. Press releases aren't informing the public" (Fussey & Murray, 2019: 64).

The Essex University report raises concerns about a lack of public engagement regarding

the MPS trials:

> We are not aware that any broader public engagement with members of the public or relevant civil society and non-governmental organisations was undertaken prior to the initiation of the test deployments in 2016. This would appear to be inconsistent with the Surveillance Camera Commissioner's Code of Practice. (Ibid.)

Oversight: Impact Assessments

In their Equality Impact Assessment, MPS list a number of other consultations with Metropolitan Police Service associations and networks including their Women's Network and Hindu Staff Association. The Trans Network Association, Met's Black Police Association and Sikh Police Association were contacted but the assessment suggests "Response awaited" (Metropolitan Police, 2020c: 23-26). In the Assessment, the Met's Disability Support Network chair raised a series of concerns. We were unable to obtain an interview with the Met so cannot confirm if or how these concerns have been addressed. The concerns raised demonstrate the range of factors that influence the functioning of facial recognition systems and the different ways bias can be embedded. Other concerns and recommendations included the Association of Muslim Police (AMP) recommendation of a clear public engagement strategy to address any "concerns of mistrust/uncertainty via the effective utilisation of Local Police Teams with emphasis on 'hard to reach communities'". They raised concerns over the accuracy of live facial recognition when practising Muslims may be wearing a headscarf or a beard and the "impact of effective lighting on [the] BAME community" (Metropolitan Police, 2020c: 24).

WebRoots Democracy, via Freedom of Information correspondence with the Met, highlight that the force's Equality Impact Assessment was not undertaken until after the Met's trial period with the technology. WebRoots argue that "given that an intrusive technology was trialled in 10 locations, many of which with a high BAME population, this is an alarming finding" (Chowdhury, 2020: 36). When MPS published an Equality Impact Assessment - in contrast to South Wales Police - they acknowledged the potential of differential impacts based on age, gender, race and religion. However, according to WebRoots Democracy, "its analysis of the racial impacts is focused on the risk of non-English speakers not understanding that LFR is being used. … It does not mention anything around the risk of some ethnic groups being targeted more than others" (Chowdhury, ibid). A "Community Impact Assessment" was completed but as the Essex University report points out, these "did not involve direct engagement with the community", nor did they gather specific views on [live facial recognition] technology (Fussey & Murray, 2019: 66). Instead, "these assessments comprised a compilation of police-held statistics and general intelligence assessments of the area", suggesting "it is difficult to claim community support or public consent for the initiative" (Fussey &

Murray, 2019: 66).

MPS's 2020 Data Protection Impact Assessment has a Public Consultation section that highlights their efforts to make information public, particularly via their website. They also highlight their assistance with academic research as indicative of their communications strategy, referring to the University of Essex report (MPS, 2020a: 40-41). Most of this public consultation section refers to efforts that most would not consider consultations with the local public.

The 2020 DPIA also states that:

> It may be appropriate to pursue engagement opportunities with a number of stakeholders including [the Mayor's Office for Policing and Crime], local authorities, and public consultative or ethical review bodies. (Metropolitan Police, 2020b: 21)

Yet it is unclear what "public consultative" work has taken place. "Ethical review bodies" would appear to refer to the London Policing Ethics Panel, set up by the Mayor of London, who have produced reports on live facial recognition (London Policing Ethics Panel website, no date).

In summary, as with the South Wales Police, we find very little opportunity for substantive public engagement. The Met has made some efforts to inform the public and done some consultation through its impact assessment. We find little real consultation. The MPS' Independent Advisory Groups are a promising area where consultation could be developed, but engagement opportunities are presently limited as their proceedings are behind closed doors. We were not able to identify any effective means for the public to influence the use of live facial recognition.

Scotland

Scotland has taken a more cautious approach to FRT than South Wales Police and MPS.[11] Scotland's Justice Sub-Commitee has said they will not move forward with live facial recognition trials for the time being, citing concerns about discrimination by such systems, stating, "that there would be no justifiable basis for Police Scotland to invest in this technology" and calling such technology a "radical departure from Police Scotland's fundamental principle of policing by consent (Justice Sub-Committee on Policing, 2020: 1; BBC News, 2020). How did Scotland arrive at such a different place on this issue compared to South Wales and London?

Oversight

Wales and England's Biometrics Commissioner, a position held by Paul Wiles until its abolition in 2020, was established under the Protection of Freedoms Act 2012 in the wake of a judgement by the European Court of Human Rights in the case of S. and Marper v. The United Kingdom, concerned with the retention of fingerprints and DNA (Protection of Freedoms Act, 2012: pt.1, c.1, para.20; European Court of Human Rights, 2008). With the passing of the Scottish Biometrics Commissioner Bill in March 2020, Scotland established its own Biometrics Commissioner (Scottish Government, 2020).[12] The Scottish Biometrics Commissioner's remit will include facial data. The Bill suggests the remit will also include iris recognition and other behavioural biometrics, such as voice pattern recognition (Scottish Parliament, 2020a).

Public Engagement

Scotland's Biometrics Commissioner has responsibilities for public engagement, largely pertaining to public awareness (Scottish Parliament, 2019: 3). Matthew Rice, Open Rights Group's Scotland Director, highlighted the form these measures could take in our interview:

> There are clear goals set for the Scottish Biometrics Commissioner that relate to holding a public debate on this (FRT) and providing the public with an opportunity to debate. … I think that's come from watching a vacuum in England and Wales on this. … Whereas in Scotland it's quite clear that it's the [new Scottish Biometrics] Commissioner who will lead that discussion and be expected to lead that discussion and that'll be a metric of their success. […] It's not as strict as saying yes, there has to be a citizens assembly or anything like that. So one thing there will be is that the Commissioner has to establish a code of practice which will be rules that would underpin the use of biometrics … and that set of rules is expected to be left open for public consultation (Matthew Rice, ORG)

John Scott QC, who chaired Scotland's

11 It was much easier to obtain access to information and interviews with key political and policing officials in our research on Scotland's relationship with facial recognition, than in our research on South Wales and England.
12 As of March 2021, Brian Plastow, a former police chief superintendent and lead inspector for Her Majesty's Inspectorate of Constabulary in Scotland has been appointed to the new Scottish post (Scottish Legal News, 2021)

Independent Advisory Group[13] (IAG) on the Use of Biometric Data in Scotland, told us that "we've gone from a situation where we were lagging behind and had missed an opportunity ten plus years ago to put a proper oversight regime in place, to a situation now where we've embraced the idea of a Biometrics Commissioner."

Following the recommendations of the IAG, the Scottish Government drafted an outline Code of Practice and Concept of Operations for the Scottish Commissioner, which were put out to public consultation (Reid-How Associates Ltd., 2018). This consultation took place largely online with individuals and organisations able to make written submissions. This was supplemented with, "four groups of stakeholders (a stakeholder symposium; equalities groups; police workforce; and the Scottish Youth Parliament Justice Committee)" (Reid-How Associates Ltd., 2018: i). This type of consulting is common practice on bills in Scotland before they go through the Scottish Parliament (Scottish Government, 2020).

The creation of a Code of Practice to oversee how biometric data is acquired, kept, used and destroyed for criminal justice and policing purposes is a core responsibility of Scotland's new Biometrics Commissioner and is intended to, along with Scotland's Biometrics Commissioner's oversight functions, underpin a more robust legal regime in Scotland regarding biometrics - including facial recognition.

Scotland's approach to live facial recognition is more open than that of South Wales, there is still a low amount of public involvement. Scotland's alternative direction does not appear to have been centrally driven by public involvement but, rather, by a series of high profile interventions. When consultations have taken place they have tended to be through online portals, which are standard practice at many levels of government across the UK, but these can be limited and dominated by a small number of politically active citizens, rather than being a wider representation of the population (Liu, 2016). Scotland's new Biometrics Commissioner looks like an opportunity for deeper public involvement in decision making.

We suggest that Scotland's political nuances are worth considering to understand how it arrived at such a different approach to considerations of FRT than South Wales Police and London's MPS. William Webster, an academic at Stirling University and a director of CRISP (Centre for Research into Information, Surveillance & Privacy) discussed some of the factors leading to the approach to FRT in Scotland.

> Scotland is trying to push a different direction. That doesn't mean that we won't have face recognition. I think it means that it will be much more heavily scrutinised and I think the big difference, and I'm just talking from personal experience here, is that Scotland has been very quick to recognise that it's a small country and it requires expertise. It doesn't have a huge civil service machine like London. It requires expertise and it reaches out much more readily to the scientific community [and] to do public consultation. It's less driven by adversarial politics. It's a different environment for decision making and driving public policy. (William Webster, CRISP)

Further, there are key differences in civil society landscapes. For example, Open Rights Group have a Scottish office but not

13 The use of this term in Scotland, compared to the Metropolitan Police's use of the same term, as noted in the last section, appears coincidental with the two referring to quite different operations.

a Welsh office. In Wales, the most prominent digital rights voices speaking about South Wales Police's use of facial recognition have been London based (Liberty and Big Brother Watch, mainly). London has received attention from digital rights groups but their relationship with the relevant authorities appears more strained than the comparable relationships in Scotland. In Scotland, civil society appears to have been consulted or engaged with in relation to facial recognition and adjacent issues more than in South Wales and London, at least in recent years. For instance John Scott QC told us of civil society groups, including multiple rights groups, with whom he and the Independent Advisory Group had engaged as part of their work. Matthew Rice from Open Rights Group relayed an illustrative exchange between members of Scotland's Justice Sub-Committee on Policing and Big Brother Watch, who had submitted a joint-submission to the Committee:

> After the Committee session [the Committee] said, "you must be heading back down to do some more work with different committees and MPs and you must be getting bored with trying to chat about this stuff to Parliamentarians," but apparently it seemed that Big Brother Watch had never been asked by any committee of any Parliamentarians in England and Wales to give them evidence. So that was the first time that one of the leading organisations in the UK working on facial recognition had given evidence to any Parliament on the use of facial recognition, and it was pre-emptive. There's no live facial recognition undertaken in Scotland at this time, but I think that's quite a striking difference in terms of how these two devolved powers have kind of interpreted where facial recognition should sit. (Matthew Rice, ORG)

In summary, after investigation and consultation with a wide range of groups including civil society organisations, Scotland's Justice Sub-Committee has said that "there would be no justifiable basis for Police Scotland to invest in this technology." Scottish authorities took a very different approach to considering police use of facial recognition technology than South Wales Police and London's MPS. Our research suggests this different approach is connected to political dynamics in Scotland which include a practice of meaningful consultation with experts from different sectors, including civil society.

Conclusion

In the three examples we have looked at the public is not being sufficiently brought into decision making regarding facial recognition. These examples paint a picture of an uneven landscape ranging from decisions being made behind closed doors in South Wales and London, to Scotland where, even though the decision processes have been more open there are still too limited exercises in gaining public input. Better processes would include democratic exercises which empower a demographically representative sample of the population and give them real decision-making power to change the course of political developments. Scotland's new Biometrics Commissioner may provide an opportunity to enhance debate and public involvement with decision making about technology, including FRT.

There does not appear to be plans to ensure greater public participation with police use of FRT in South Wales and London. The South Wales Police intend to accelerate their use of facial recognition technologies, including plans for a smartphone based system and talk of integrating live facial recognition with CCTV networks. Police in London have made use of FRT operational.

Risk Based Verification Case Study

Our investigation

This work builds upon work from our last project which flagged risk based verification (RBV) as a predictive scoring system used by a substantial number of UK local authorities, with 19 mentions in the results of our Freedom of Information requests. (Dencik, et al., 2018: 20-25). In this section we present a case study of RBV including what opportunities there are for citizen input vis-a-vis the implementation, deployment and potentially the decommissioning of RBV.

RBV is not a widely discussed or researched system; we therefore decided to base our study on interviews. We used previous research, internet searches, council minutes and media coverage to identify councils using RBV and to identify people we could contact. Where we could not identify an individual we contacted a general Revenue & Benefits department email for the council in question. This resulted in us speaking to a number of managers from Revenue & Benefits departments. In the end we interviewed six members of staff from five different local authorities. We contacted the DWP for an interview on multiple occasions but did not receive a reply.

What is Risk Based Verification (RBV)?

Used to administer social welfare benefits by UK councils, RBV is a system for risk scoring claimants' applications to justify increased or decreased scrutiny.

> RBV is a method of applying different levels of checks to benefit claims according to the risk associated with those claims. ... RBV assigns a risk rating to each HB/CTB [Housing Benefit / Council Tax Benefit] claim. This determines the level of verification required. Greater activity is therefore targeted toward checking those cases deemed to be at highest risk of involving fraud and/or error. (DWP, 2011: paragraphs 5-8)

In 2011 the DWP recommended, via a circular distributed to Housing Benefit and Council Tax Benefit related staff, that Local Authorities start using RBV for Housing Benefit and Council Tax Benefit applications, following RBV's use on aspects of claims in Jobcentre Plus and the Pension Disability and Carers Service (DWP, 2011: paragraphs 1-4; DWP, 2013: 53). The circular states that the classification of risk groups are a matter for Local Authorities to decide, but offers the following examples of how they might be constructed (DWP, 2011: paragraph 9):

Low Risk Claims: Only essential checks are made, such as proof of identity. Consequently these claims are processed much faster than before and with significantly reduced effort from Benefit Officers without increasing the risk of fraud or error.

Medium Risk Claims: These are verified in the same way as all claims currently, with evidence of original documents required. As now, current arrangements may differ from

LA [Local Authority] to LA and it is up to LAs to ensure that they are minimising the risk of fraud and error through the approach taken.

High Risk Claims: Enhanced stringency is applied to verification. Individual LAs apply a variety of checking methods depending on local circumstances. This could include Credit Reference Agency checks, visits, increased documentation requirements etc. Resources that have been freed up from the streamlined approach to low risk claims can be focused on these high risk claims.

RBV policies

An important component of RBV implementation is the RBV policy. The 2011 DWP circular requires all Local Authorities implementing RBV to have this policy in place, which should detail "the risk profiles, verification standards which will apply … the minimum number of claims to be checked … must allow Members[14], officers and external auditors to be clear about the levels of verification necessary" and must be reviewed annually (DWP, 2011: paragraphs 14-15). The 2011 DWP circular states these policies, "which would include the risk categories, should not be made public due to the sensitivity of [their] contents" (DWP, 2011: paragraph 14). This was verified in our interviews. However, an internet search for "risk based verification policy" reveals a number of RBV policies that have been made public.

Chichester District Council's 2017 RBV policy notes their use of Xantura's RBV software which "utilises around 50 variables to predict the likelihood of Fraud and error" (Chichester District Council, 2017: 2). The document follows many of the stipulations of the DWP circular and expands on how these should be operationalised. For example, possession of a passport is associated with low risk claims, whilst claims from employed or self-employed individuals result in a high risk categorisation (Ibid.: 3).

Rochdale Borough Council's verification requirements appear broadly the same (Rochdale Borough Council, (no date: paragraphs 3.5-3.7). Torbay Council's requirements are broadly the same but include some additional detail such as identifying student status as grounds for requiring original documents (Torbay Council, 2017: 5). Bristol City Council's RBV policy includes an appendix detailing the requirements of each risk band (Bristol City Council, 2018).

Variables used

Despite having access to some example policies, it is unclear how the RBV software being used makes its risk category calculations. The Chichester policy indicates passport possession can be a factor, but it additionally notes that the Xantura system they were using utilises "around 50 variables" (Chichester District Council, 2017: 2). Torbay Council highlights the black box nature of digital RBV systems, reflecting a point

14 Elected councillors.

highlighted in our interviews:

> A risk profile will be given to each customer, determined by proprietary software using statistical information and risk propensity data gathered over many years about what type of claim represents what type of risk. (Torbay Council, 2017: 4).

Echoing comments in the Chichester RBV policy, Xantura describe the part of their system for handling new claims:

> The new claims model utilises up to date data from a wide range of UK LA's and is in use at more than 40 local authorities, all of whom are benefiting from both increased claim processing efficiency and higher fraud and error detection rates at the claim gateway. The risk model utilises circa 50 variables to predict the likelihood of Fraud and error at the gateway and is reviewed and updated in order to reflect both legislative and claimant behavioural change.[15]

Additional reporting

In October 2019 the Guardian highlighted the delaying of benefits claims wrongly categorised as high risk and raised concerns regarding the transparency of algorithms in the public sector (Marsh, 2019). The UN Special Rapporteur on extreme poverty and human rights, in a statement on his visit to the United Kingdom in 2018, highlighted the DWP's promotion of RBV, raised concerns regarding the method's lack of transparency and questioned the accuracy of automation at such a scale. "The presumption of innocence is turned on its head when everyone applying for a benefit is screened for potential wrongdoing" (Alston, 2018).

Big Brother Watch have highlighted the transparency implications of keeping RBV policies private and were concerned that one council, in a risk assessment relating to RBV, cited a primary concern as ensuring their staff trusted the RBV system, rather than the efficacy of the system (Big Brother Watch, 2018). Councils' concern that staff may not trust and use the RBV system as intended was also highlighted in our interviews.

MedConfidential highlight that a citizen can have their RBV risk category upgraded but not downgraded, with no process for appeal. They claim RBV "'cuts holes' in the social safety net with no warning, explanation or recourse for those individuals who fall through them" (MedConfidential, 2020: 2). Among other issues, they highlight the difficult position which local authorities have been put in by the DWP following their recommendation to use RBV. Authorities are recommended to use RBV, but the DWP endorses no product or company. The available products are proprietary and their algorithms are opaque. Therefore, authorities (unless they develop their own RBV in house with software or a paper-based solution) are pushed into a situation where they are using an algorithm which does not reveal how it puts claimants into risk categories (MedConfidential, 2020: 10).

15 http://web.archive.org/web/20190703211734/https://www.xantura.com/focus-areas/risk-based-verification

Why authorities stop using RBV

Bristol City Council began using RBV for new claims and changes in October 2014. They state in September 2020, the point at which they halted their use of the system,

> It has not delivered the anticipated savings in workload for staff or significant improvements in average processing times. (Bristol City Council, 2020: 1)
>
> Additionally, they state that despite RBV's promoted advantage of redirecting resources towards "high risk" cases, it identified "very few fraudulent cases and the management information available has offered no assurance of the value of this process." They also cite "significant changes in the wider welfare landscape and new technologies. Such changes include the roll out of Universal Credit (which has significantly reduced the number of new claims for Housing Benefit) and new systems such as the Verify Earnings and Pensions (VEPS) system "to check current earnings and pension data provided to HMRC by employers/ pension providers", and the DWP's Housing Benefit Matching Service and access to its Searchlight system "which allows validation of almost all DWP/ HMRC benefits" (Bristol City Council, 2020: 1).

Additionally, they state that despite RBV's promoted advantage of redirecting resources towards "high risk" cases, it identified "very few fraudulent cases and the management information available has offered no assurance of the value of this process." They also cite "significant changes in the wider welfare landscape and new technologies. Such changes include the roll out of Universal Credit (which has significantly reduced the number of new claims for Housing Benefit) and new systems such as the Verify Earnings and Pensions (VEPS) system "to check current earnings and pension data provided to HMRC by employers/pension providers", and the DWP's Housing Benefit Matching Service and access to its Searchlight system "which allows validation of almost all DWP/HMRC benefits" (Bristol City Council, 2020: 1).

The Guardian reported that North Tyneside Council had stopped using their TransUnion RBV system due to delays incurred by the system when it incorrectly identified low risk claims as high risk (Marsh, 2019). A document report by the council highlighted that the system "provides no reason for a case meeting a high risk category and it was found that in most cases the reason for it being high risk could not be established" (North Tyneside Council, 2019: paragraph 1.5.13). Harrow Council withdrew the use of RBV for Housing Benefit and Council Tax Support assessments in 2020 citing the rollout of Universal Credit "the level of complexity of a high proportion of residual claims" making RBV less effective (Harrow Council, 2020).

Our research, on the condition of ensuring anonymity, identified two additional councils who stopped using automated RBV systems. The reasons given were that the system did not make a material difference and the roll out of Universal Credit meant the systems were no longer necessary. Bristol's report notes that other councils had also abandoned the use of RBV, on their cancellation mentions further examples of councils abandoning RBV, including authorities in Manchester, Newcastle, Nottingham, and Sheffield (Bristol City Council, 2020: 2). A variety of reasons have been cited for the abandoning of RBV by authorities. Whilst we do see accuracy concerns feature, based on this limited number of examples, it appears that efficiency gains and the changing benefits environment, particularly in light of

the roll out of Universal Credit, are primary motivating factors.

A note on devolved administrations

All of the councils we identified as using RBV in our previous project - and which determined our sample for this research - were in England. Initially it was unclear whether RBV has been deployed in the UK's devolved nations (Wales, Scotland, Northern Ireland) but our research identified that RBV has been used in Scotland and Wales. Glasgow was an early pilot site for TransUnion's RBV system[16] (Glasgow All of the councils we identified as using RBV in our previous project - and which determined our sample for this research - were in England. Initially it was unclear whether RBV has been deployed in the UK's devolved nations (Wales, Scotland, Northern Ireland) but our research identified that RBV has been used in Scotland and Wales. Glasgow was an early pilot site for TransUnion's RBV system[14] (Glasgow City Council, 2009: 8) and Cardiff Council planned to begin using RBV as recently as January 2020 (Cardiff Council, 2019). We were unable to find examples from Northern Ireland, likely owing to its different benefits landscape. We did, however, find a brief mention of Causeway Coast & Glens Borough Council's intention to move to "a risk-based verification approach" for grant applications in an effort to reduce bureaucracy (Leisure & Development Committee, 2018).

Interview analysis

We interviewed six senior members of staff working for Local Authorities who had been involved with or had expertise on the implementation and operation of Risk Based Verification systems and Revenue & Benefits services.

Which vendor?

Vendors of RBV mentioned included Coactiva, Callcredit/TransUnion, and Xantura. The first three have merged over the years but appear to have operated distinctly in the past. RBV was found to often be offered as part of larger public sector software packages offered by companies like Northgate, Civica, and Capita. These packages cover many different aspects of Revenue & Benefits services. Whilst it was suggested that the norm for RBV was for a software based system, it was highlighted that a paper-based system can still operate in line with the DWP's guidelines.

The hegemony of a small number of major software providers was highlighted by one of our interviewees. They claimed Revenue & Benefits related legislation has become so complex that it is difficult for councils to produce their own in-house software, so most purchase privately developed software from Northgate, Civica or Capita. These companies keep up to date with legislative requirements, including the money provided by central government to meet the new requirements, and they will tailor their service directly to these constraints - including often charging exactly the same amount of money as central government has made available to councils

16 A document was previously available on TransUnion's website which indicated this was their pilot (along with another pilot in Lambeth), but it has since been taken down (https://www.transunion.co.uk/media/2064626/files/assets/common/downloads/publication.pdf). In the same document TransUnion claimed to have introduced the concept of RBV to the DWP in 2007.

for a given service alteration.

Why was RBV implemented?
Along with the direct suggestion from the DWP's 2011 circular, reduced processing times emerged as the main motivation for implementing RBV. These can help both reduce costs and, as was cited multiple times by our interviewees, help meet targets driven by national benchmarking exercises. Informal communication between council authorities was a noted factor, such as someone recalling their experiences with RBV on an online forum used by council employees, or a senior employee wanting to use the same software vendor as in a previous role at a different authority.

How are decisions made relating to RBV and who is involved with those decisions?
Final decision making on the implementation of RBV appears to lie with elected councillors. However, councillors may be shielded from the details of the system. The source of the original motivation to implement RBV could have come from senior staff or perhaps even someone working in a more technical capacity - it can vary. The idea to implement RBV could come from marketing from a software vendor, such as a company that a council already has ongoing contracts with. There is usually communication between the council and the RBV provider relating to the details of the system, such as what evidence is used. However, the exact functioning of the algorithm is a black box. Software providers were seen by our interviewees as having expertise that could be relied on.

In our investigation we found no involvement of citizens at any stage of the implementation of RBV. The system was seen as more of a mundane, back office system providing no reason to engage with the public. One interviewee said how the public might "overthink it … [and] try to skew the system if they're aware of [it]".

Despite such comments, the impression from our interviews was that it was more the perceived mundanity of the system which meant the system was not consulted on. One interviewee reported that their council had considered if the public needed to be consulted but decided against it.

Were external organisations (e.g. civil society) consulted with?
All of our interviewees answered a variation of no to this question. One interviewee did highlight how they, in general, keep in dialogue with local groups and stakeholders in the community, but they did not engage with those groups specifically on RBV. Revenue & Benefits departments' relationship with the Department for Work and Pensions was often cited in response to this question, with one interviewee saying they view their department as a subsidiary of the DWP.

Channels for internal and external feedback
Interviewees reported informal internal channels for feedback from Revenues & Benefits teams to higher management. Such channels greatly depend on how receptive senior members of staff are and internal dynamics specific to each council. Elected councillors seemed to be the most likely source of feedback. They are also the most likely conduit for the public's views to be heard. However, this depends on the receptiveness and proaction of individual councillors.

We were told comments from the public submitted to councillors could sometimes make their way to back office teams but that this was not common practice. A main barrier with RBV would be the public's lack of knowledge regarding the system. One interviewee recalled that in their multiple decades working in their job or similar roles they had never had an experience of feedback from the public. They said even if some external, citizen lobbying happened they would still take into account the cost

of that citizen action compared to the cost of the change being pursued - such as the implementation of RBV.

Oversight & auditing

We asked what processes or mechanisms there were in place for oversight or the auditing of a system like RBV. Some reported monthly meetings where topics such as RBV could come up, and it seems it is from meetings like these that decisions such as whether to discontinue RBV would come. Dialogue with software vendors providing RBV was also mentioned, in particular during the early implementation of the system where the risk categories are tweaked. Further, external audits were mentioned, carried out by companies like KPMG and Deloitte. One interviewee noted that the first RBV related aspect auditors would look for is the RBV policy (see subheading above) and if it had been implemented in line with DWP guidelines. Councils may also carry out internal audits, risk assessments, equality impact assessments, and the like. Some councils ran trials for RBV prior to deployment, with one employee we spoke to saying their trial led to them postponing deployment for a few years.

Evaluation of the impact of the system upon staff and decision makers

We wanted to learn if any considerations had been made to investigate the potential impact of the system upon staff and decision makers. For example, one might want to investigate if the introduction of a new system could lead to staff putting too much trust in the integrity of its decisions, therefore removing an element of human oversight - or other theoretical circumstances one might imagine. This was another question to which we received a round "no" from all interviewees. One interviewee interpreted the question to speak about the difficulties in getting staff to trust the system. Another mentioned training provided by the software vendor.

Influence of critical discourse

We asked questions about the potential influence of critical discourse from the media, civil society and academia. Again, we received a "no" across the board. Criticisms in the media of the DWP or notorious software vendors such as Capita were mentioned briefly but were nonetheless presented as distant from the work of Revenue & Benefits departments.

Impact of Universal Credit

We did not initially plan to ask about the influence of Universal Credit but it came up organically a few times during our interviews and emerged as a significant factor causing councils to abandon, reevaluate, or reconsider RBV. Whether or not this was a factor depended on the demographics of a council's population, which influences the types of benefits being claimed in a given area. One council employee we spoke to was aware that some councils were moving away from RBV because of Universal Credit but they stated that RBV was still nonetheless useful to them because of how their local demographics influenced the flow of benefits claims. The slow, uneven rollout of Universal Credit further means that it has affected the use of RBV in different ways - some places may not even have fully implemented UC yet. Vendors of RBV software are aware of the impact of UC and have made some effort to justify the continued use of their software (for example: Xantura, 2019). One interviewee claimed Universal Credit is "something which the software companies are very, very concerned about".

Examples of citizen engagement

We wanted to learn about examples of previous, effective citizen engagement either on RBV directly or in a similar situation. This was another question we received a "no" from all interviewees. One interviewee said they had a database of residents who were

available to be consulted on an ad hoc basis, which was not explored in much depth in the interview but sounded similar in part to a citizens' panel (Involve, no date a).

Do risk categories follow citizens?
A question we were interested in was whether RBV's risk categorisations ever go beyond the immediate RBV itself. For example, could someone's high risk categorisation influence their provision of public services in another area, or find its way into court proceedings, etc.? We introduced this question later into our interviews and were assured that the risk scores remain within the immediate RBV process only.

It was claimed that TransUnion's credit referencing capabilities overlap with their RBV provision, presumably by using similar or the same databases. TransUnion is one of the UK's big three credit referencing agencies. Our research did not look into the interplay between RBV and credit referencing but, given that these endeavours overlap and the opacity of the variables which are used by a company such as TransUnion in their RBV provision, it does not seem unreasonable to expect some sort of link between these two in terms of the data they draw upon. It is worth bearing in mind that the council employees we spoke to are potentially just as much in the dark about the data that is being used by RBV to make its decisions.

Conclusion

Our investigation sought to explore the opportunities for citizen involvement during the deployment and use of a system like RBV. While we learned a lot about RBV primarily what we found about citizen engagement was its absence. It seems the only way that a member of the public could attempt to influence the provision of this system would be via their local councillor - but this would depend greatly on the receptiveness of the councillor. This would depend on if a citizen knows about RBV; a system which is not widely publicised, often buried in council minutes if mentioned at all. RBV was seen by the council employees we spoke to as a mundane, back office system. Even they do not have a comprehensive understanding of how it works, given the proprietary nature of its core algorithms. It is not seen as necessary for the public to be consulted on the use of this system.

Significant questions remain unanswered. What data does RBV use to produce its risk categorisations? How can someone be sure the data about them is accurate? Is it ok to use the data in that way? Why are some factors - such as passport ownership or student status - used to determine what risk categorisation a benefits application should be placed within? Given the importance of state benefits for many people's lives it is easy to imagine the impact a system like this could be having. Benefits applications can be stalled at a critical time because of decisions which are impenetrable. First, due to a hidden layer of local government decision making with little to no opportunity for public input. Second, due to black box algorithms which use unknown variables.

There are many unknowns with RBV. The existence of these unknowns highlights the need for avenues for the public to influence decision making relating to data systems. Without public knowledge, scrutiny, and ultimately influence, systems like RBV produce opaque regimes which may create difficulties in individual's lives without them even understanding the cause. Or RBV could have little to no negative impact. The point is that without further public input into spaces like this, we cannot adequately know.

02

Models of Civic Engagement

Literature Review

The second part of the project explored methods and models that can enhance people's voices in policy debates and create new avenues for deliberation and interaction between citizens and government. It focused on the possibilities and challenges of citizen assemblies, citizen juries and similar initiatives in affecting decisions over the deployment of data systems.

Such practices are situated in a longer history of participatory democracy. Pateman notes a spike of interest in the 1960s, reemerging around the turn of the century (Pateman, 2012). Boeker & Elstub point to a rise of participatory democracy in the 1970s, followed by the arrival of deliberative democracy in the 1980s and 90s which cemented a normative revival in democratic theory. Prominent conceptual angles of the contemporary debate on the participatory reform of democracy include democratic innovations and mini publics. In this section we will briefly review these and related concepts.

Democratic innovations

As was noted already in the contextual chapter of this report, the debate on "democratic innovations" has been a burgeoning academic field built upon notable publications, both academic and popular (e.g. Escobar & Elstub, 2019; Fishkin, 2018; Arriaga, 2014; Smith, 2009; Hendricks, 2011; Geissel & Newton, 2012). The goal of democratic innovations is to "increase and deepen citizen participation in the political decision-making process" (Smith, 2009: 5). They tend to be positioned in contrast to representative democracy and electoral politics, offered either as a remedy for the latter's flaws or as an alternative (Escobar & Elstub, 2017b). Some observers have argued for the institutionalisation of democratic innovations to either replace or augment current systems of representative democracy (Patriquin, 2020; Van Reybrouck, 2016).

Typical incarnations of democratic innovations include popular assemblies, direct legislation, and e-democracy (Smith, 2009). Baiocchi & Ganuza propose the following list:

> Democratic innovations cover a wide range of instruments: participatory budgets, citizen juries, deliberative surveys, referenda, town meetings, online citizen forums, e-democracy, public conversations, study circles, collaborative policy making, alternative dispute resolutions, and so on. (Baiocchi & Ganuza, 2017: 39)

The shape, scale and purpose of innovations varies, however, as Newton's caveated definition highlights:

> A democratic innovation may be defined for present purposes as the successful implementation of a new idea that is intended to change the structures or processes of democratic government and politics in order to improve them. It is difficult to go beyond this vague and empty formulation because democracy itself

> is an essentially contested concept, and hence there is argument about what helps or hinders its improvement. (Newton, 2012: 4)

Whereas Newton casts a wide net, noting that "political innovations are a matter of degree, ranging from small but discontinuous changes, to large and potentially revolutionary ones" (Ibid.: 5), other authors emphasise the more substantial contribution of the concept and practice "to the crucial exercise of imagining the potential future direction of advanced industrial democracies" (Smith, 2009: 200) and distinguish it from a focus on "small-scale institutional structures: town meetings, workers' cooperatives, neighbourhood governance, etc." (Smith, 2009: 2). Most academic approaches to democratic innovations share an interest in the reform of existing institutions of liberal democracy, rather than a focus on grassroots mobilisations. Yet some scholars have called for "a more direct focus on facilitating leadership of the disempowered and diversification of the contexts of democratic innovations" (Wojciechowska, 2019a) and increased attention to economic inequality (Solt, 2008).

Boeker & Elstub note how differences between democratic methods - including factors such as inclusiveness, duration, selection method, activities, and outputs - can influence the critical capacity of a resulting democratic exercise (Boeker & Elstub, 2015). Bryant & Hall highlight that design elements of participatory initiatives can influence a process and its outcomes substantially. For example, they emphasise the importance of considered citizen recruitment strategies to avoid "the problems of self-selection and the participation of the 'usual suspects'" (Bryant & Hall, 2017: 7).

Democratic innovations thus differ according to the degree to which they remain tied to established democratic institutions. Many of their iterations may address what Warren calls "governance-driven democratisation" as governments, technocrats and administrators take an interest in democratic experimentation (Warren, 2009). This contrasts, according to Patemen, with earlier debates on democratic theory which concerned the meaning of democracy itself (Pateman, 2012). However the engagement with institutional reform can explore new participatory avenues and shift political systems. Advancing strategies of political participation can certainly, as Wojciechowska argues, address a disconnect from political practice (Wojciechowska, 2019b). Discourse around democratising state-citizen relations and public institutions are considerably influenced by the growing field of democratic innovations.

Mini-publics

Mini-publics constitute a specific collection of democratic innovations which bring together a (more or less) small sample of the wider population, often based on randomised selection of participants, and foster a deliberative dialogue. They include different models, such as citizens' juries, consensus conferences, planning cells, deliberative polls, and citizens' assemblies (Escobar & Elstub, 2017a; Breckon, et al., 2019; Bryant & Hall, 2017). However their exact shape and relevant criteria vary across different scholars and studies, and categories of mini-publics are often bent or reshaped depending on their required usage. They often differ mainly regarding participant numbers and selection (Contact Consulting, 2018; Bryant & Beddow, 2017; Ada Lovelace Institute, 2021).

A core feature of mini-publics is usually

considered to be their use of random selection, most often via a method known as random stratified sampling

> so that a range of demographic characteristics from the broader population are adequately represented - e.g. age, gender, ethnicity, disability, income, geography, education, religion, and so on. (Ecobar & Elstub, 2017a: 1)

However, while some scholars regard randomised selection as definitional (e.g. Smith, 2009) or an indicator of quality (e.g. Fishkin, 2018), others highlight the importance of considering minority groups and affected communities, particularly "when populations have been constituted in starkly inequitable ways" (Steel, et al., 2020: 47). While mini-publics are often claimed to be a social science method able to assemble a microcosm of the public, the Ada Lovelace Institute has noted that they

> "can never be statistically representative of the wider population, nor should they aim to be. Instead, they should reflect the diversity of views within a population. (Ada Lovelace Institute, 2021: 15)

Similarly, Shared Future c.i.c. - a further institutional actor that has organised and informed mini-publics - emphasises the importance of recruiting "people who are usually excluded from participatory processes" (Bryant & Beddow, 2017: 4). Steel et al. respond to the range of interpretations of representativeness and diversity by suggesting a

> purposive design approach that emphasises articulating the aims of deliberative mini-publics and linking them to concepts of representativeness and diversity, which can then guide recruitment strategies. According to this approach, deliberative mini-publics may differ in their aims, and a single mini-public may have mixed or hybrid aims. (Steel et al., 2020: 46)

They contrast this approach, with its "attempts to proceed deductively from universal principles of democracy" to the "influential position on representation in deliberative mini-publics according to which political equality (understood as the equal chance of influencing political outcomes) justifies interpreting representation in a statistical sense". They echo Shared Future c.i.c.'s methodology, similarly arguing for the utility of the oversampling of minority groups in some cases (Steel, et al., 2020: 46-47).

As our references to Shared Futures c.i.c. and the Ada Lovelace Institute demonstrate, much of the work on mini-publics can be found outside the academy. Think tanks such as Nesta have explored this model (Breckon, et al., 2019); the organisation Involve provides an extensive "Knowledge Base" on democratic innovations[17]; and the OECD issued the report "Innovative Citizen Participation and New Democratic Institutions: Catching the Deliberative Wave", which explores the current trend in democratic innovations and provides relevant resources[18] (OECD, 2020). At government level, the UK Department for Digital Culture, Media & Sport (DCMS) and the Ministry of Housing, Communities & Local Government (MHCLG) run the "Innovation in Democracy" Programme and publish guidelines, reports and handbooks (DCMS & MHCLG, 2020a; 2020b).

Furthermore, many democratic innovation

17 https://www.involve.org.uk/resources/knowledge-base
18 The OECD report uses this term interchangeably with "representative deliberative processes" and "deliberative processes", something they highlight before going on to explore the nuances of regularly conflated terms like deliberative and participatory democracy, with "mini-public" a much less utilised term in this report (OECD, 2020: 10). Once again, this highlights the definitional ambiguity present

practitioners publish accounts of their exercises, providing insight and offering examples for future efforts. For example, Citizens' Juries c.i.c. publishes the materials provided to participants and detailed outputs of a deliberative process.[19] The EU-wide Deliberative Poll, Tomorrow's Europe, offered a more press-oriented output along with other detailed materials, including briefing materials from the event (Center for Deliberative Democracy, 2007a; 2007b). The SurPRISE Citizens' Summits on surveillance produced a dedicated website[20], as did Ireland's Citizens' Assembly[21], which has received international attention for the role it played in Ireland's abortion referendum (McKee, 2018). Websites such as Participedia[22] and Latinno[23] provide details of mini-publics and other forms of democratic innovations from across the world with more of a focus on methodology.

A wide range of both practical resources and academic analyses of mini-publics and other forms of democratic innovation have thus emerged and demonstrate a growing interest in participatory and deliberative democracy. However the support for participation by governments, official bodies and NGOs has also been criticised as a form of assimilation "in striking contrast to participation in the 1960s, which was championed by popular movements" (Pateman, 2012: 7). The institutionalisation of mini-publics and other forms of democratic innovations may be a double-edged sword, as Boeker & Elstub note:

> [A]s deliberative theory itself increasingly emphasises institutional innovations such as "mini-publics" to achieve deliberative democracy in practice, realpolitik has made a resurgence, rendering deliberative democracy less normative and critical. (Boeker & Elstub, 2015: 2)

Democratic Innovations and Data Systems

Models of democratic innovations and mini-publics have been applied to a range of different topics (see the examples in the next section), but data technologies, automation and AI have only recently emerged as a field of interest for using these methods. The organisation Citizens Juries c.i.c.[24], for example, have organised a number of citizens juries relating to data - in particular, in the field of health policy - and related technological issues. In 2017 they worked with Connected Health Cities to run two citizens juries to explore whether proposed uses of health data were acceptable to the public (Connected Health Cities, 2017). In 2019, they collborated with the Greater Manchester Patient Safety Translational Research Centre and the Information Commissioner's Office (ICO) on citizens juries looking at a perceived tradeoff between explainability and accuracy in AI decision making in four areas (criminal justice, recruitment, and two healthcare scenarios) (Greater Manchester PSTRC, 2019). The organisation has worked on a number of other health data related projects involving citizens juries (Healtex, 2018; National Data Guardian, 2018; HeRC, 2016). Other examples for using democratic innovations to approach the topic of health data have included a citizens' summit organised by OneLondon,

within this field. It is this set of ambiguities which have inspired our looser application of some of these terms throughout this report.
19 http://www.patientsafety.manchester.ac.uk/research/themes/safety-informatics/citizens-juries/
20 http://surprise-project.eu/
21 https://www.citizensassembly.ie/en/
22 https://participedia.net/
23 https://www.latinno.net/en/
24 https://citizensjuries.org/

Ipsos Mori, and The King's Fund (OneLondon, 2020), as well as public dialogue events run by Ipsos Mori and the Health Research Authority to explore views of consent regarding the use of patient data linked to human tissue in health research (Ipsos MORI & Health Research Authority, 2018). Ipsos Mori and The Royal Society also used a quantitative survey, public dialogues, and an online community to investigate public views on machine learning (Ipsos MORI & The Royal Society, 2017).

The UK Centre for Data Ethics and Innovation (CDEI), in partnership with Ipsos MORI, ran two full-day public dialogues and four "groups of special interest" as part of their research into online targeting (CDEI, 2020). The UK Department for Transport commissioned a series of public dialogues across five locations in the UK on attitudes towards connected and automated vehicles (McCool, 2019), while the Royal Society initiated a Neural Interfaces Public Dialogue (van Mil, et al., 2019)[25]. RSA's "Forum For Ethical AI", in partnership with DeepMind, used a citizens' jury to explore the use of automated decision systems (RSA, 2019). The larger SurPRISE EU Citizen Summit on Surveillance engaged with citizens from across Europe on the acceptability and acceptance of security technologies (European Commission, 2016). The "Montréal Declaration for a Responsible Development of Artificial Intelligence" involved over 500 citizens, experts, and stakeholders in workshops to develop guidelines for AI (Montréal Declaration, 2018). New York City's Automated Decision Systems Task Force ran a number of public forums and community sessions across the city on the use of automated decision systems (Automated Decision Systems Task Force, 2019).[26]

A series of "community juries" investigated Australian communities' perspectives on the use of data in the detection and control of infectious disease outbreaks in 2018/19 (Degeling, et al., 2020). In 2020, the Ada Lovelace Institute co-convened a rapid, online mini-public exploring attitudes towards the use of COVID-19 related technologies for transitioning out of lockdown (Ada Lovelace Institute, 2020) as well as a Citizens' Biometrics Council on AI and data driven biometrics technologies (Peppin, 2020; Ada Lovelace Institute, 2021). Alongside this work, the Ada Lovelace Institute ran a number of "Community Voice" workshops to explore in depth the disproportionate impact of biometrics technologies with individuals from black and minority ethnic backgrounds, as well as with disabled people and LGBTQI individuals (Patel & Peppin, 2020). The Nuffield Foundation have called for more initiatives like these as part of their roadmap for work on the ethical and societal implications of algorithms, data, and AI, calling for "[b]uilding on existing public engagement work to understand the perspectives of different publics, especially those of marginalised groups, on important issues, in order to build consensus where possible" (Whittlestone, et al., 2019: 3).

25 A useful resource, albeit with a much wider scope than our review, is the Department for Business, Energy & Industrial Strategy's paper, "The use of public engagement for technological innovation" (d'Angelo, et al., 2021).
26 This process was heavily criticised by many people, including some of those involved. A group went so far as to publish a "shadow report" in response to the official City of New York report, providing context and an alternative perspective on the process and its outputs and the degree to which critical voices were listened to (Lecher, 2019; Richardson, 2019).

Critical Mapping of Participatory Models

As the previous section demonstrated, a set of different models have emerged to consult citizens and enable deliberation of - and, to some extent, participation in - policy decisions. Here we outline the most prominent ones and provide examples. As noted before, there are few generally agreed distinctions between different models, and so the boundaries between them are porous, but some guidelines and shared experiences have emerged. We present them discreetly in an effort to mirror the comparable scholarship which ascribes specific characteristics to these methods (e.g. Breckon et al., 2019; Escobar & Elstub, 2017; Bryant & Hall, 2017; Involve, no date c). However, our rendering of this space also reflects insights gained from our interviews, particularly with regards to competing definitions of democratic methods and blurred boundaries. The following definitions therefore constitute a loose overview, reflective of contemporary practices, rather than a prescriptive list.

As discussed in the previous section, many of these models refer to the concept of mini-publics. Aiming to generate "a microcosm of 'the public'" (Escobar & Elstub, 2017: 1), mini-publics assemble a relatively small sample which is representative of the whole of society and can therefore be interrogated for views which, ideally, reflect the views of a wider population - whether at the local level or on a national or even international scale. In their purest form, mini-publics are composed through random stratified sampling, i.e. a random selection of citizens. However, some mini-publics have been weighted towards certain demographics, such as particular affected communities, or have used other means to capture a diversity of voices.

At the core of mini-publics is their deliberation, usually informed by pre-prepared materials and presentations by individuals with specialist knowledge (often referred to as experts but sometimes as commentators, which highlights the expertise of participants). This deliberation may lead to a variety of outputs depending on the context, incl. policy recommendations, guidelines and norms. Mini-publics usually require some form of facilitation and management, are led by an oversight panel, and are commissioned by an institution, such as government. Organising a mini-public can be a costly exercise, and so a key challenge is access to resources. The involvement of larger institutions, private agencies and the state may often be required for that reason. Participants in deliberative initiatives are often paid for their participation.

Citizens' juries

Citizens' juries are one of the most widely used participatory and deliberative models. Pioneered by the Jefferson Centre in the United States, they have been adopted across the world in a variety of different contexts.

A citizens' jury typically assembles around 12-25 participants, chosen either by sortition (i.e., randomly from the wider public) or to represent the variety of public viewpoints; a chair or facilitator; and presenters or expert

witnesses to explain different elements and controversies of the topic. Participants deliberate for several days on a specific question, topic or policy decision that they have been given and draw conclusions which may take the form of a report or, less commonly, take an actual decision to be implemented by policymakers (Bryant & Hall, 2017). Different iterations exist regarding core features, such as the length - typically between two and seven days - and the method of recruitment. Common characteristics, though, are the focus on a fairly specific policy question, a limited time frame and a relatively small number of participants.

Examples

Citizens Juries cic - Explainability of AI decisions
http://www.patientsafety.manchester.ac.uk/research/themes/safety-informatics/citizens-juries/

RSA - Ethical use of AI
https://www.thersa.org/discover/publications-and-articles/reports/artificial-intelligence-real-public-engagement

South Australia nuclear waste storage citizens jury
https://www.democracyco.com.au/our-projects/nuclear-waste-storage-citizens-juries/

Citizens' assemblies

Citizens assemblies are usually larger and last longer than citizens' juries. They typically have 50-250 participants and can last from a day or a weekend to a few months, potentially with meeting days spread out over a longer period. Citizens' assemblies share core features with citizens' juries, including commissioners, an oversight panel, presenters/expert witnesses, and detailed, facilitated deliberation (Involve, no date b; Breckon et al., 2019), and they may adhere more strictly to the principle of random selection of participants. Citizens assemblies are usually higher profile events and, due to their larger size, are often perceived to carry more authority. Their output may include a report that may inform a policy process - e.g., the British Columbia citizens assembly on electoral reform informed the construction of a referendum (Scully, et al., 2021).

Citizens assemblies have garnered increasing interest in the UK in recent years as potential means to resolve larger societal controversies, such as on Brexit (Renwick, et al., 2017) and the climate crisis (Harrabin, 2020)[27]. Ireland's citizen assembly on the legalization of abortion has demonstrated the possibilities of his model in dealing with historical challenges and overcoming deadlocks (Palese, 2018). Citizens' assemblies are generally better suited for issues of regional, national, or international relevance. They might thus be useful for discussing wider agendas regarding data technologies, rather than specific or localised issues, such as the procurement of a data system. To date, few examples exist for their application on questions of data and AI.

27 One of Extinction Rebellion's key demands has been a citizens assembly on climate change. https://rebellion.earth/the-truth/demands/

Examples

Irish Citizens' Assembly on Constitutional Amendments
https://2016-2018.citizensassembly.ie/en/

British Columbia's Citizens' Assembly on Electoral Reform
https://citizensassembly.arts.ubc.ca/public/extra/Whatis.xml.htm

Citizens' Assembly of Scotland
https://www.citizensassembly.scot

Citizens' summits

"Citizens' summit" is a dynamic concept with sometimes vague boundaries and often less strict adherence to requirements such as random sampling. A citizens' summit typically refers to large (500-5000) deliberative public meetings, often covering a broad topic. The aim may be to consult with the public on a broader question of public relevance or on specific policy proposals. Some citizens' summits have relied heavily on communications technologies such as electronic voting, text messages, and online services. Most summits are open to all citizens (often self-selected) although some effort may be made to include particular demographics. Citizens' summits are novel for the large scale of interaction they attempt to facilitate, possibly even working at an international level.

Examples

SurPRISE Citizens' Summits on surveillance
http://surprise-project.eu/events/citizen-summits/

OneLondon Citizens Summit on the use of health and care data
https://onelondon.online/citizenssummit/

G1000 Citizens' Summit in Uden (Netherlands)
https://participedia.net/case/5679

Distributed dialogues

A distributed dialogue may share features from other types of engagement but expands the centralised approach of a summit or jury towards a decentralised series of events. These may be (co-)organised by various interested parties and geographically distributed (or held online), thus increasing the number of people able to engage with the process. The dialogue events allow for a greater degree of self-organisation by groups of participants, potentially reducing running costs and assigning participants more influence and control. However, they require significant initial (and often centralised) planning and provision of informational materials, guidelines etc. Challenges include the maintenance of consistency across different dialogues and the safeguarding of representative recruitment or random sampling.

Examples

EuropeSay: Citizen Dialogues on Artificial Intelligence
http://tekno.dk/article/eusay-ai/?lang=en

Bioenergy distributed dialogue
https://participedia.net/case/5384

Involve: Explanation of distributed dialogues
https://www.involve.org.uk/resources/methods/distributed-dialogue

Consensus conferences

Consensus conferences bring together a small number of participants - typically 10-25 people - to find common ground on emerging and contentious issues. During the first stage, participants learn about the topic, the process, and the group, and select experts to advise. In the second stage, which often lasts around three to four days, the participants question experts, deliberate and compile a report which outlines their collective position. The conference may function as a public hearing, aimed at informing the public and developing norms and guidelines. Participants often have more substantial influence than in other models to steer the debate, define the issues and shape the process. Consensus conferences were pioneered by the Danish Board of Technology and may thus be applicable to questions of data technology, although no experiences exist to date.

Examples

Danish Board of Technology
https://tekno.dk/focus_area/democracy-citezen-engagement/?lang=en

Consensus conferences on genetically modified food in Norway
tinyurl.com/y73y6ks4

Consensus conference on genetically modified crops in Japan
https://participedia.net/case/542

Deliberative polling

Developed by scholar James Fishkin of Stanford University, a deliberative poll engages a random sample of citizens in extensive discussion on a chosen subject, and identifies their preferences through polling before and after the discussion. It thus builds on the traditional concept of public opinion polls but complements it with an assembly and face-to-face deliberations amongst participants. It allows participants to become more informed and explore a topic in depth before giving their final verdict. In that way, it also offers an opportunity to analyse changes in attitude.

Deliberative polls often involve over 100 and up to 500 people. Their focus on measuring public views and shifts in opinion may make them a less prominent model for advancing participation and empowerment. However they have been applied on a wide range of issues and in diverse localities.

Examples

Tomorrow's Europe - EU-wide deliberative poll
https://cdd.stanford.edu/2007/tomorrows-europe-the-first-ever-eu-wide-deliberative-poll/

Deliberative polling for education planning in Northern Ireland
http://civicinnovationni.org/Case-Studies/Deliberative-Polling-for-Education-Planning

Mongolia's deliberative poll on constitutional amendments
https://cdd.stanford.edu/2017/mongolias-first-national-deliberative-poll-on-constitutional-amendments/

Citizens' panels

Citizens' panels assemble large (ranging from a few hundred to several thousand) groups of people to assess public preferences and opinions. Often established by a public institution, they may serve as a consultative body for policy decisions. Diverging from a random selection model, citizens' panels are typically composed of a self selecting group of citizens who have responded to a call for panel members, although representative samples may be selected from that larger group. Like deliberative polls, citizens panels' are based on the idea of opinion polls and, in some cases, online forums, and may therefore lack some of the participatory elements of, e.g., citizens' assemblies and juries.

Examples

Cardiff Citizens Panel
https://www.cardiff.gov.uk/ENG/Your-Council/Have-your-say/Cardiff-Citizens-Panel/Pages/default.aspx

Bristol Citizens' Panel
https://www.bristol.gov.uk/consultations-and-petitions

Bank of England citizens' panels and forums
https://www.bankofengland.co.uk/get-involved/citizens-panels

Permanent mini-publics

While most of the models mentioned here comprise one-off events, attempts have been made to institutionalise mini-publics as permanent bodies. A permanent council or assembly is composed of a randomised sample of the general population, which would either augment or replace existing political decision making bodies. Versions of this model at the more radical end have called for the replacing of existing institutions, such as parliaments, while more modest proposals include, e.g., the establishment of a second chamber of the Scottish Parliament as a permanent mini-public which could rotate members on a six month to two year basis (Hennig et al., 2017; Citizens' Assembly of Scotland, 2020). Permanent mini-publics could constitute an oversight body for, e.g., the deployment of data systems by government and advance public literacy on such issues through its rotation. However there are few practical implementations of this model to date.

Examples

German speaking Belgium's permanent Citizens' Dialogue
https://www.cor.europa.eu/en/engage/brochures/Documents/From%20local%20to%20European/4082_Citizens%20Consult_brochure_N_FINAL.pdf

Madrid's Observatorio de la Ciudad
https://participedia.net/case/6895

Poposal of a "house of citizens" to scrutinise government proposals and give assent to parliamentary bills in Scotland
https://www.sortitionfoundation.org/scotland_calls_for_a_house_of_citizens

Participatory budgeting

Developed by the Brazilian Workers' Party in the 1980s, participatory budgeting is a democratic process by which community members decide how to spend part, or potentially all, of a public budget. The process centres around the presentation of projects which are seeking public funding, with participants voting on which project they think should receive funding. This method has seen wide use across the world and assigns citizens direct power over the development of their communities. Some participatory budgeting exercises have managed large amounts of money, such as in Paris where, in 2016, €100 million were voted on.

A participatory budgeting process' primary constraint is the amount of money allocated to it. Further, the commissioners of the process (most likely a government body) may gatekeep which projects are included in the process and, therefore, which are able to get funded. Finally, the requirement to decide between projects does not necessarily involve more thorough deliberations over their usefulness (e.g., if the public is given a choice over which private provider of live facial recognition technology they wish their police force to use).

Examples

Scotland's Community Choices Fund
https://www.gov.scot/policies/community-empowerment/participatory-budgeting/

Paris
https://www.participatorybudgeting.org/pbparis/

New York City
https://council.nyc.gov/pb/

Digital tools and online deliberation

Digital tools have been used to support and augment many of the processes mentioned here, and during the Covid-19 pandemic some mini-publics initiatives were moved to online platforms. Delib's Citizen Space, for example, is used by many government authorities to facilitate consultations, surveys, etc.[28] More ambitious examples include Consul, a suite of tools equipped to facilitate many aspects of democratic engagement, from debates and public proposals to participatory budgeting and voting, used widely in the Spanish speaking world. Decidim is a digital democracy platform used in Barcelona, and Better Reykjavik is a platform for online debate over community development in the capital of Iceland (and adopted elsewhere across Europe). In Iceland, earlier efforts to develop a new national constitution by a citizens' council utilised existing social media platforms for crowdsourcing and reviewing citizen proposals.

Examples

Consul
https://consulproject.org/en/

Decidim
https://decidim.org

Better Reykjavik
https://reykjavik.is/en/better-reykjavik-0

28 https://www.delib.net/citizen_space/

Interview Analysis

In order to explore challenges and opportunities of participatory and deliberative models in more depth, we carried out 13 interviews with experts and practitioners who have experience in organising these initiatives. The interview analysis first explores themes and controversies that pertain to the suitability of participatory models for enhancing people's voices in the deployment of data systems, and then addresses the applicability of specific methods.

Quotes from our interviews are inserted to underpin arguments. In accordance with the rest of this report, they are attributed to the institutions that the respective interviewees work with. However they remain personal opinions and do not express institutional statements.

Suitability of Participatory Models for Decisions on Data

Datafication is a complex and technical issue that can be difficult to grasp for citizens who are not professionally involved with it. As many studies have shown, while data collection and analysis concern our everyday online (and, increasingly, offline) practices, many people feel overwhelmed and unable to properly assess what data is collected where and for what reasons (e.g., Dencik & Cable, 2017). As a result, people are accepting what they believe they cannot change, leading to what scholars have called 'digital resignation' (Draper & Turow, 2019). We might therefore expect participatory models to be unsuitable for engaging with issues that require a certain level of technical knowledge.

However most of our interviewees were confident that the models discussed in the previous section would be appropriate for deliberations and decisions regarding data and AI. While some questioned whether mini-publics would be able to produce in-depth and informed conversations on complex topics, the majority believed that the methods allowed for varied approaches to the subject which would raise participants' understanding significantly. Interviewees who had organised participatory initiatives on data issues - including citizens' juries on AI decision-making in criminal justice, recruitment and healthcare; a citizens' summit on the use of health and care date; and the Citizens' Biometrics Council - were particularly convinced that these models were useful and felt strongly that their experiences demonstrated that ordinary citizens without prior knowledge were able to develop thorough outcomes and relevant policy recommendations.

Interviewees suggested a range of strategies that might help advance the debate, such as addressing complexities piece by piece:

> When you get to very technical things, there might be limits, but you could break up technical issues into smaller bits and get a debate around something that's on a bigger scale. Provided there's reason to believe that people would have differing views, I would have thought that would lend itself very well to it. (University College Dublin)

As this quote shows, technical problems

such as datafication are embedded in social, political or economic controversies, and participants may not require a full understanding of all technical details to assess the implications of a technology. For example, a debate on facial recognition technology might not need a full assessment of all specific technological details to explore impacts and experiences of affected communities.

If data is typically linked to non-technical effects, those may be a better primary reference point for participants. For example, a debate on health data may be more fundamentally about health than data. Even if the introduction of data is often the novel factor of interest, the thematic context will likely relate to people's lived experiences.

> We often don't recognise that we're not just engaging people on data, we're also engaging them on health and the complexity of the NHS and the way that data sits within the NHS. (Ada Lovelace Institute)

A challenge that emerges from this, and was raised by interviewees, concerned the ubiquity of data and AI which have come to touch so many areas of life that it may be difficult to maintain the focus of a discussion and arrive at actionable outcomes. The degree to which questions are narrowed or broadened was seen as an important consideration for the design of a participatory initiative. Different approaches can also substantially influence the amount of time and resources required.

An important factor for the feasibility of a participatory initiative on data, according to interviewees, is the extent to which the public already know and care about the issue. Some questions might not yet have appeared on people's radars and, therefore, they might possess less prior knowledge and require additional preparatory support. On the other hand, topics which benefit from prior discourse, such as facial recognition or biometric IDs, might be affected by prior convictions by participants.

> If you're dealing with something like facial recognition, then that's going to be emotive enough that people might be interested to go and learn more and give their views about it. But if it's some issue to do with a new online way of dealing with Social Services, certain sectors of the community might be more interested than others, so you could end up with a skewed sample. (University College Dublin)

One interviewee who had helped run a deliberative process on a data related issue noted that their team had to develop new methods and adapt existing models because of the lack of existing work in this area. In putting together their own process they moved forward in a way which they felt was most appropriate for the challenges associated with data-oriented debates. This has not been unusual in the field of democratic innovations, as we demonstrated in the previous section. After all, every process has its unique qualities. However, when dealing with data-related issues, the relative lack of a history of democratic exercises compared to some other areas (such as health) may render the need to chart one's own course more acute.

Representation

The requirement for random sampling in ideal-type mini-publics (see previous section) may clash with the experience that people are unequally affected by the use of data systems. As scholars have demonstrated, data is not collected about everyone in the same way, the implications are not the same for everyone, and there are deep inequalities as to how we can resist and respond. Several interviewees thus noted that data-related participatory initiatives may require a stronger focus on recruiting members of communities that are most affected, such as minority ethnic backgrounds, LGBTQ populations, and people with disabilities. While interviewees recognised the importance of representing the wider public, many of them acknowledged the need for compromising rigorous models in order to adapt them to the difficult realities of datafication.

At one end of the spectrum, interviewees argued for a specific focus on the interests and experiences of marginalised communities, for example stating: "Participation is not enough. You also need inclusion" (University of Iceland). At the other end, they argued for maintaining the system of random recruitment:

> To me it's not the right place to try and populate [a citizens jury] with lots of little individual special voices. Some people argue for having mini-publics representing all the points of view. I think that's an impossible target. I don't think it's realistic. (Citizen Juries CIC)

However, several interviewees considered both positions and emphasised the need to reconcile different goals. As one interviewee, coming from the position of ideal-type mini-publics, noted:

> We obviously use random stratified sampling, so we make sure that we reach a broad demographic and include people with marginalised voices and generally often try and over-recruit from, for example, young people or people from BME communities in order to enable them to play a part because when you've got 25 people and only one of them is a young person, and by young I'm talking under 20, say, then there's a big chance that they're going to drop out of the process or feel that they don't have space. So however hard you facilitate that to give them that space, it's better to have two or three people from those groups that are generally absent from these conversations. (Shared Future CIC)

The need to provide sufficient space for marginalised and particularly affected communities was raised across many interviews as well as by participants of the fact-finding workshop. Further, some interviewees emphasised the importance of buy-in by relevant decision-makers, which might include their involvement in the process:

> You need inclusion both in the sense that you want different groups in society to be represented and included but also that you need the different kinds of stakeholders to participate. (University of Iceland)

Finally, the question of representation may also be related to the purpose of a deliberative process as participatory initiatives differ widely according to their size, the questions they address, their proximity to policy decisions, and the role they assume in democratic debate. As one interviewee

highlighted:

> You could run a bad process with a really clear purpose and you'd get a better outcome than running exactly the right sort of process with no purpose. (Involve)

Bias

A prime goal of random recruitment is the avoidance of bias. Many deliberative initiatives are designed specifically with measures to offset particular biases or the primacy of certain voices, in order to arrive at outcomes that may be representative for the wider population. However, even practitioners of these methods appeared aware that this ideal result may be difficult to achieve. The potential for bias in organising and holding deliberative events was flagged across most of our interviews. As one organiser of citizen juries noted:

> I don't think you [can] eliminate bias. I think you can monitor it and minimise it but all of us have our own particular worldview. … There's inevitably unconscious bias, for instance, in how we phrase things. (Citizen Juries CIC)

Another practitioner explained that they were aware of being unable to present unbiased information to participants, but nonetheless attempted to put forth a balance of views. Interviewees acknowledged that hidden assumptions and structural limitations may always be present in or around even the best constructed and most well meaning democratic process. Organisers therefore need to be aware of these factors and employ strategies of adaptation.

Bias may emerge at different steps of a deliberative initiative. The commissioning organisation has significant leverage in setting the goals and the questions that are to be addressed, and potentially in cherry-picking results which might distort the outcomes. Specific experiences of such actions by commissioning institutions were mentioned by interviewees, particularly if the deliberative process is commissioned by government and subject to party-political negotiations. The political situatedness of any such democratic exercises can have a significant impact on the process and outcomes.

However, the political context might also be conducive to political experiments and commissioning institutions might, in some circumstances, regard it as beneficial to foster democratic engagement and allow for significant leeway in how deliberative processes are shaped. Interviewees working in Scotland, for example, highlighted these dynamics and claimed that their specific political context offered alternative opportunities, in comparison with the rest of the UK.

Considerable influence can be exerted by commissioners and organisers by framing the debate. Differences across the processes we observed occurred, for example, in the ways in which the value of data was highlighted in the information material that participants received. Several of these events started out emphasising the unquestioned importance of data and/or AI and guided discussion

towards the degree to which data/AI should be implemented, not whether it should be deployed at all. Some interviewees who had organised such events defined as their main goals to 'maintain public confidence', 'build public trust', and 'respond to public concerns'. These approaches to a deliberation on the use of data and AI would suggest a pro-data/AI bias that leaves very little possibility for questioning data uses more fundamentally and, potentially, rejecting them.

The role of an oversight board was highlighted to ensure the fairness of the process and attempt to reduce bias. In particular, the oversight board would ensure that the presenters speaking to participants and any pre-prepared materials are showing a variety of perspectives and not skew in a way which may become evident in the processes' outputs. This, of course, would require the oversight board itself incorporating a diversity of perspectives, which may not always be the case. Further, quality facilitation during the process' proceedings was flagged repeatedly as key for reducing bias, particularly for deliberative exercises such as citizens' juries and assemblies. But again, facilitation may be an entry point for bias.

While the possibility of this influence was widely acknowledged across interviews, opinions and normative assessments varied. Some interviewees also recognised the positive role that a commissioning institution may have. Some simply noted the realities of a resource-intensive process and felt that commissioners, often as the ones paying the bills, had the right to guide a process according to their vision. One interviewee, on the other hand, stressed that the commissioning and design of processes should be kept separate to protect the integrity of the process so that commissioners cannot bake their desired outcomes into the process.

Arguments emerged across several interviews for allowing participants to shape the process. One interviewee relayed conversations with participants who had expressed an interest in drilling down into a particular aspect of their process topic, which was then given additional attention in later sessions. Those running the process adapted it to feedback from participants. Yet we need to acknowledge that the participatory and deliberative models explored in our research are not typically self-organised grassroots events, run entirely by the citizens whose voices they claim to amplify, but are highly structured and resource-intensive processes that often require involvement by larger institutions and may thus be subject to significant institutional influence. This inherent tension at the core of these models and methods raises the question of the extent of participation that might be enabled and the degree to which citizens are empowered..

Degrees of participation

A key question for a participatory and deliberative process is whether it may lead to an actual transfer of power, shifting policy influence to citizens, or whether it might rather be an exercise in legitimising the rollout of data technologies. Are participants assigned a meaningful voice, or even decision-making power, or are they given the illusion of participation to address growing demands of a 'citizen voice', which may be characterised as 'engagement-washing' or 'participation-washing'?

To start with, we need to acknowledge that most of the models we observed focus on deliberation, rather than a substantial power

shift from government to citizens. These initiatives do not replace governmental decision-making. However they may - in different ways and to different degrees - influence policy debate and exert normative pressure on decision-makers.

Several of the initiatives we observed applied deliberative and democratic models as social science research methods to learn about the public's preferences and opinions regarding data and AI. These would resemble a sophisticated public opinion poll rather than a power transfer. Despite the obvious shortcomings of this approach, the goal of such an initiative would still be to inform policy and enhance citizen voices in the policy process. We encountered a genuine interest amongst organisers of such initiatives to democratise decision-making through deliberative models, even if the immediate goal was not to transform decision-making structures in government.

Some interviewees referred directly to Arnstein's ladder (see the conceptual context section of this report) in discussing the influence that participatory and deliberative methods had:

> Usually people situate [citizens juries] within the collaborative end of the spectrum and I think that that's probably the right space to put it within. So these processes are good at creating spaces where dynamics of power are more equally distributed than they otherwise would be. I think that's a really important way of conceiving it because they are often criticised for not being able to completely shift that dynamic, but the important point is that they shift the dynamic far more than most other engagement processes. (Ada Lovelace Institute)

While we expressed caution in the previous section regarding the often prominent role of government and other institutions, proximity to governmental decision-making processes can enhance the participatory potential of deliberative initiatives, as several interviewees noted. Such initiatives would typically be designed more narrowly around specific questions and therefore leave less space for a fundamental questioning of data uses (see above), but their output may feed more directly into policy decisions and thus affect governmental decision-making.

Permanent mini-publics were mentioned in different interviews as an example of a democratic process where participants are potentially more empowered to both shape the process and affect policy. Further, a focus on a substantive field with a track record of citizen involvement may offer enhanced opportunities to influence decisions:.

> I think the health context is a really interesting example of how such things happen. There are a lot of patients' groups and patient boards and a really strong tradition in health policy of the involvement of groups that are impacted by health policy in the governance of the way health policy develops. (Ada Lovelace Institute)

Outcomes and impact

Outputs of the participatory and deliberative initiatives that we observed ranged from reports to the production of guidance documentation, decisions feeding into wider public debate, decisions going on to shape referenda, and recommendations being considered by government. The impact of these was mixed, ranging from a broader understanding of public concerns to specific policy shaping. Generally, interviewees highlighted that effective outcomes require that the intended impact is borne in mind while a process is being commissioned and designed.

The institutional nature of these models (see above) meant that a direct policy link was favoured by several interviewees. One argued that a key way to achieve impact is to start from policy makers and then think how democratic exercises can influence their work and open up or devolve power to citizens, rather than starting from citizens and engaging less with terrain of the decisions being intervened in. Similarly, there was critique of less confined goals:

> If it's not clear what the impact is going to be or whether anyone is listening, I don't think that these should be commissioned. (...)
>
> Too often engagement is commissioned to try and change the behaviour of the public, convince the public to do something, and that's bound to fail for all sorts of reasons. So it won't have an impact because how can engaging a very small group of people change the behaviour of the wider public? (Involve)

However, different perspectives were visible in our research, with some organisers of deliberative processes aiming at normative outcomes which may inform public debate and thereby raise pressure on policy-makers.

Policy impact often faced obstacles of governmental processes and party-political dynamics. It was raised that not all politicians may be "brave enough" to adopt recommendations and that public servants may not be willing to "give up their lifetime of expertise and trust to really deliver on the recommendations". Further, the limited term time of government and the uncertainties of planning beyond the next election may prevent government from engaging with substantial deliberative processes and their outcomes. Again, this demonstrates the impact of commissioners:

> Ultimately it is, to a large extent, up to the commissioners to respond to the recommendations. (Citizen Juries CIC)

According to several interviewees, this may involve governmental commissioners selectively picking from the outcomes of a deliberative exercise, without necessarily engaging with broader concerns and perspectives.

> It was far from perfect and there was a strong element of cherry-picking on the part of the government. There were some reports that were rejected or all but completely ignored by Government. (University College Dublin)

The outcomes of deliberative processes appear strongly contingent on a number of circumstances, from the political context to the character of the commissioners, to the individual qualities of the participants. One interviewee echoed this, remarking, "I'm sure we could run the process again and it would be slightly different, and that's just the way it goes."

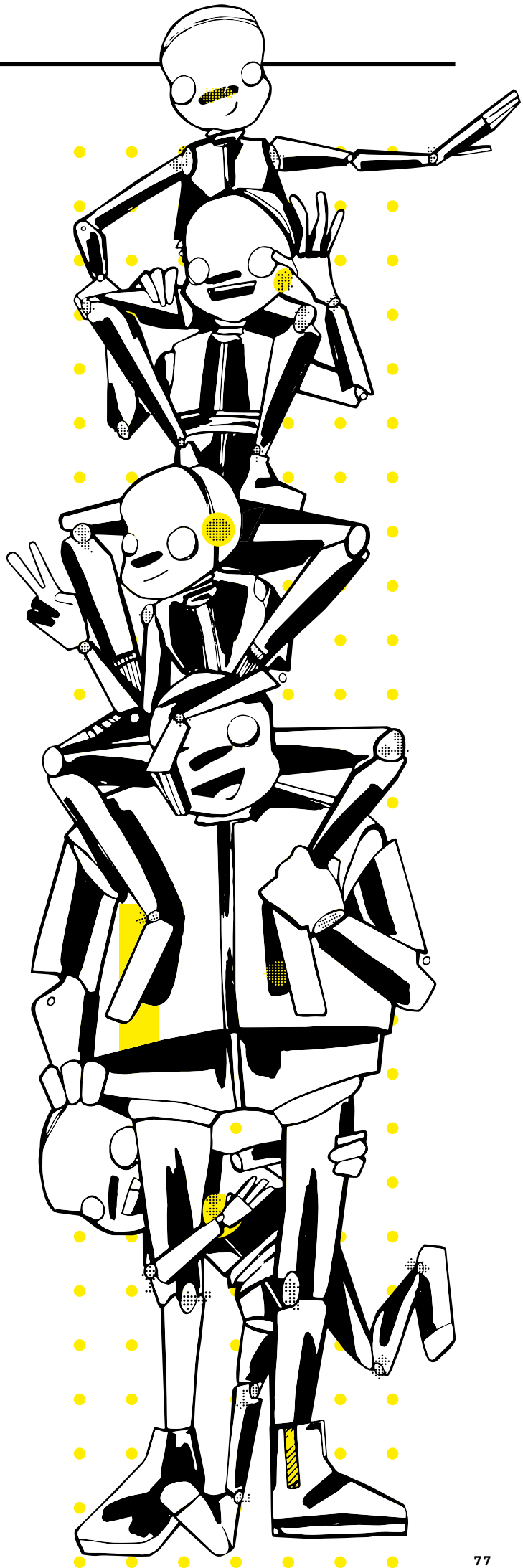
When to engage

The tension between specific policy impact and the possibility of exploring wider concerns affects the question at what point of the policy cycle the public should be engaged. Those interviewees who prioritised the broader goals of participation and democratisation argued for early and comprehensive involvement.

> Deliberative processes should happen quite early on in the decision making process … otherwise it will end up being engagement-washing (…) - the appearance of public engagement but insufficient time for a policy maker or the organisation doing the research to be able to respond to the process. So if a public deliberation is happening that'll be very close to the point at which a decision is being made or it is clear already what the decision is that has been made, then there is really not much value in doing it. (Ada Lovelace Institute)

Permanent mini-publics on specific areas, such as data or biometrics, may introduce democratic methods early on in decision making processes, potentially giving them deeper influence over decisions than if such methods are introduced on an ad hoc basis and later in the timeline.

Final decision-making, however, remains a space where participants often have less influence. What happens with the outcome of a deliberative process is typically out of participants' hands. We were told of the difficulties of participatory processes rubbing up against more ossified, existing procedures (e.g. existing procedures for the passing of bills, or established procurement processes). Decision-making empowerment would thus require more fundamental institutional change.



Applicability of Models

Our interviewees agreed that no single deliberative method alone can improve democracy but should, rather, be part of broader moves towards more participatory and open structures. Most implementations of deliberative methods therefore do not adequately shift power into the hands of the public. The importance of building beyond the processes themselves was highlighted.

During our interviews we discussed a wide variety of models, but only some of these have, so far, been applied for questions of data and AI. For the remainder of this section we explore the limitations, advantages, requirements, and challenges of specific models and their application for data-related topics.

Citizens juries & citizens assemblies

Citizens' juries and citizens' assemblies were regarded as particularly suitable for addressing data-related questions, as they offer space for educating participants, involving expert presenters, and a flexibility regarding their length which may be conducive for learning about, and discussing, complex technical issues.

Citizens' assemblies can be useful to overcome particularly controversial topics of broader societal debate, with Ireland's experience on the issue of abortion rights being held up as an example by interviewees, whereas citizens' juries may be more capable of exploring specific policy issues. As one interviewee noted, both are "good at what-should-we-do questions" and promise a significant impact on policy-related debate and/or decisions. Multiple interviewees thereby highlighted the importance of a well-defined central question to guide participants' deliberations.

Yet interviewees also applied flexibility to concepts and models. One interviewee explained that the process they had initiated was called a 'citizens' council' because of the slightly broader nature of the central question and the different recruitment practices. Another one pointed to alterations regarding the size, recruitment practices and overall goals as reasons for naming their methodology a 'citizens' summit': "It doesn't necessarily have a precise definition behind it, it was just our choice of words" (Ipsos Mori) These examples demonstrate the fluidity of terms and the need for adapting rigid frameworks in order to address the complex theme of data and AI appropriately. As one interviewee noted: "We are not wedded to any particular methodology" (Ipsos Mori)

As was already noted earlier, this flexibility involved the need to understand, particularly, the perspectives of minority populations and marginalised communities due to the uneven impacts of datafication. This might include not just categorisations such as ethnic backgrounds but also other minority populations, such as people living in a certain area and socio-demographic contexts. While the demographic spread captured by the randomised participant selection methods of citizens' assemblies and citizens' juries were understood as useful for investigating the views of a wider population, several interviewees argued in favour of "over-recruiting" underrepresented voices.

These differences in perspectives were largely grounded in different views regarding the adherence to strict model guidelines, rather than specific differences of, for example, the size of a process. One interviewee noted that their citizens' jury had too few participants

to capture a true demographic spread of the wider population, and so they instead aimed for diversity and attempting to include individuals from as many different backgrounds as possible. However another interviewee who argued for the strict implementation of the citizens' jury method ran processes with very similar (or lower) participant numbers.

The resource requirements of citizens' assemblies, in particular, were raised repeatedly as a significant practical obstacle as well as an entry point for political power considerations. Even smaller citizens' juries can be very expensive and time-intensive, which may limit who can commission them. Further, participants may need to be paid for the time they invest in the process, particularly if members of marginalised communities should be involved, yet this raises costs further.

While larger citizens' assemblies may be viewed as more authoritative, interviewees noted that smaller processes could be more conducive to productive conversations. A small citizens' jury might explore a specific issue in depth whilst a larger assembly might struggle to go beyond the basics. These methods are therefore contingent on their goals and purposes.

Interviewees largely felt that citizens' juries and assemblies were promising methods to address current controversies regarding data and AI. However they also raised caution regarding overblown hopes of a democratisation of data governance through these models. They can constitute useful components, but this depends on their specific purposes and implementations, as well as the political context.

Deliberative polling

Deliberative polling was mentioned as a further method that may be appropriate to engage citizens on complex topics which they may not have prior knowledge or enthusiasm about. The model was praised for its ability to produce systematic and scientific conclusions (by comparing changes in opinion before and after deliberation) and was likened to a structured consultation by one interviewee, with its deliberative element being viewed as useful for overcoming knowledge barriers.

One interviewee with experience of running a deliberative poll stated the possibility of combining it with other methods, such as citizens' assemblies. Another interviewee noted how their organisation used focus groups and surveys alongside citizens' juries, underlining that a particular method is rarely sufficient in isolation. However, at the time of conducting the research, we did not (yet) encounter the application of deliberative polling - either on its own or in combination with other methods - for questions of data and AI.

Permanent mini-publics

Permanent mini-publics constitute a body, similar to a citizens' assembly, that would be set up permanently (although members, chosen by sortition, could change) to either augment, sit alongside, advise, or replace existing political decision making bodies, such as parliamentary chamber. As noted before, this model was raised as a reference point in several of our interviews.

Our interviewees were largely cautious of a model that does not widely exist yet but may have significant democratic implications. The dominance of political parties and representative democracy was highlighted as a large barrier, as were concerns around an institutionalisation of mini-publics, with the potential emergence of new power structures. As one interviewee noted: "The more you empower people, the less they become like normal members of the public".

However the model raised interest regarding the need for more effective engagement with issues of data and AI, and the lack of effective oversight and policy frameworks in this area. While standing participant panels have been established, for example by Genomics England, permanent mini-publics on the wider deployment of data and AI have not moved beyond the ideas stage.

Participatory budgeting

As one of the most widely discussed democratic innovations, participatory budgeting (PB) may complement the more institutionalised and structured approach of permanent mini-publics. The basic premise of PB is that a portion of a budget (usually local government) is allocated to different projects or initiatives according to how the public votes in an open democratic exercise. This model may affect decisions on, for example, the procurement of data systems.

Participatory budgeting was claimed to be a "tangible", direct way that the public can influence decision making, since they are (depending on the details of a particular implementation) given direct control over a pot of money. One interviewee noted that PB can also be a way to shift people's attitude towards democracy by giving them an opportunity to exercise direct control. Budgets were seen as a relatively convenient, straightforward and important site for potential democratic intervention.

The growth of PB in Scotland, where it has gained the most traction within the UK, was discussed as a manifestation of a general desire for more participatory democracy in that nation. It was noted that a political environment friendly to PB - including, e.g., Scotland's Community Empowerment Act - was a factor contributing to its spread. Scotland's independence referendum was noted as a factor contributing to the growth of participatory democracy in Scotland, viewed in the context of an appetite for "democratic renewal" (Scottish Community Development Centre). However, while a sympathetic political environment was claimed to be significant to PB's success, PB has not (yet) been specifically implemented for questions of data and AI.

Online systems

Online systems were mentioned as important complementary mechanisms to support public engagement, provided they are implemented appropriately. In particular, they may help involve people who might be hard to reach via other methods.

A few of our interviewees opined that digital crowdsourcing is a viable avenue for democratic development (including, to a limited extent, via social media). Online forms of participation were considered a possible avenue for limited co-production, with the public being able to shape the terms of the debate. However, this depends on the platform, with less sophisticated platforms allowing only shallow debate and limiting the value of contributions.

It was acknowledged that face-to-face engagements tend to be more nuanced. A lack of public understanding of data related issues may hinder the ability for participants engaged at a distance to properly contribute to the process, whereas a citizens' jury involves presenters in providing participants with complex and nuanced information face to face and, therefore, in a way which might be more digestible. Yet the COVID-19 pandemic significantly advanced experimentation with online mini-publics, with the online Citizens' Biometrics Council, organised by the Ada Lovelace Institute, as a notable example.

Public communication

Although not a democratic method in itself, public communication was mentioned as an important ancillary function which is often important for the success and impact of deliberative exercises. It was claimed to be important for informing the wider public about a democratic process, with a well known deliberative exercise potentially enjoying a larger impact. Communication was also linked to wider education, which can increase literacy on otherwise esoteric topics, such as data, and provide a better ambient level of understanding.

Preliminary conclusion

Deliberative models that have emerged in the conceptual context of mini-publics and other democratic innovations enable a wider range of citizen voices to be incorporated in policy debate. While they do not transfer decision-making power to citizens and therefore offer only a limited form of participation, they can highlight civic concerns and bring them to the attention of policymakers; they can help shape a public as well as policy discourse on data and AI; and they can thus affect the normative framework of the deployment of data systems.

Controversies regarding their usefulness and application include the degree to which marginalised communities should be included (and their voices prioritised), and whether the goals and institutional frameworks of public engagement might lead to the legitimisation of policy decisions rather than their democratisation. These and other issues will be explored further in the 'Discussion' chapter of this report.

03 Oversight and Advisory Bodies

Literature Review

What constitutes an oversight body?

Oversight bodies in the UK provide advise and review for the executive and public administration, thereby strengthening the oversight function of parliament which is considered to be more generalised and time-constrained (De Vrieze, 2019: p.8). In the governance literature, oversight bodies are variously referred to as arms-length bodies, quangos, non-departmental public agencies, public sector bodies and watchdog institutions (for example see Beetham and Weir, 2008; De Vrieze, 2019; Pearson et al, 2015). Although it is hard to apply a uniform definition to this cohort, political neutrality and independence from government are common features of such bodies. Oversight may imply the provision of expertise and advice as well as scrutiny. For instance, De Vrieze states that an oversight body will either act independently to establish facts, or perform a technical function, or their activities will require political impartiality, or a combination of these three (2019: p.8). Similarly, Pearson et al outline three functions of arms length bodies: they provide government with access to external expertise and advice; allow operational freedom to bodies with specific delivery priorities; and can build public trust by removing political influence from certain decisions (2015: p.1). Greve et al define quangos as "organisations which spend public money and fulfil a public function but exist with some degree of independence from politicians" (1999: p.139), though they also note that any body or organisation "which cannot be unquestionably defined as public or private is open to being labelled as a quango" (ibid: p.136). Dommett and MacCarthaigh define quangos as agencies that are at arm's-length from government and "either provide public services, arbitrate or advise the government" (2016: p.249).

According to Greve et al, quangos have a long history in the UK but in the 1990s a "quango explosion" under the Blair government ushered in a distinctive form of bureaucratic reorganisation known as New Public Management, which emphasised delegation and contracting-out into the private sector and led to "the transfer of functions from traditional governmental bodies to a new range of quasi-autonomous task-specific bodies" (ibid: p.130). Quango reform was a key priority for Cameron's coalition government which viewed quangos as inefficient and costly, but although the number of quangos was reduced it was often through mergers and reclassifications (Pearson et al, 2015: p.2), and academics suggest this reform did little to change the entrenched role and perception of quangos as "an indispensable part of the state" (Dommett and MacCarthaigh, 2016: 249). Some have questioned the openness of quangos and government agencies, however, pointing out that the public has no access to them. For example Beetham and Weir argue that in practice the "extensive" use of quangos under Blair diminished "the ability of ordinary citizens to contribute to debate over public policy" by removing "layers and areas of policy-making and action from the parliamentary and public gaze" (2008: 136). They further argue that the UK oversight landscape is closed and secretive, with formative consultations taking place in narrow policy circles that preempt more formal public consultation exercises (ibid). Dommett and MacCarthaigh suggest that arm's-length government is both "confused and opaque" with inconsistency across names and types of organisation and some

accountable to ministers while others are accountable to parliament (2016: p.251). Greve et al criticise the quango state for lacking accountability and legitimacy but at the same time find it is "an integral layer of governance" (Greve et al, 1999: p.129).

Oversight bodies and data

It is hard to pin down what exactly constitutes an oversight body in relation to data. The Royal Society's recent review of the UK data governance landscape splits oversight into two categories: the structures and bodies responsible for governing the use of data and the organisations that advise on data governance (2020: p.11 and p.16). The former includes central government departments, regulators, standards bodies and public sector bodies while the latter includes national academies and professional associations, research and development organisations and civil society organisations (ibid). This is different, however, to other literature which views oversight bodies as separate and distinct from civil society; for example the parliamentary Committee on Standards in Public Life finds that civil society organisations provide distant scrutiny and lack capacity compared with oversight institutions (2020: p.63), whereas, conversely, Keller distinguishes between the paternalist rationales of "remote" regulatory and oversight bodies and the participatory accountability that "societal watchdog organisations" such as Privacy International provide (2019: pp. 42-43). Further, the Royal Society notes that within the oversight landscape, "organisations often have overlapping remits or areas of interest" (ibid: p.24).

According to Keller, an important function of data oversight bodies, and especially statutory regulators like the ICO, is to act as "trusted intermediaries representing the public interest in circumstances where full public transparency is not possible" (2019: p.41). For the Committee on Standards in Public Life, "specialist oversight bodies are useful tools for ensuring that difficult ethical issues relating to AI are given proper consideration" (2020: p.63). In terms of policy priorities, key data governance areas for oversight bodies are data ethics, data privacy and anonymisation, data sharing and data interoperability, data protection and security, and responsible innovation; and as it stands the most prominent of these is data ethics with ten different organisations currently providing oversight in this area (Royal Society, 2020). In total, the Royal Society identifies thirty different organisations that are at arms length from or independent from central government and which play a part in shaping or overseeing data governance (ibid: p.11 and p.16).

Power and enforcement

Despite an expansive oversight landscape, however, the literature suggests that the UK's technology governance framework is not yet fit for purpose and there are concerns about a lack of hard power. For example, in its review of AI and public standards the parliamentary Committee on Standards in Public Life concludes that public sector data governance "remains a work in progress and deficiencies are notable" (2020: p.4). The

Committee commends the oversight work of the Turing Institute, the ICO, the Centre for Data Ethics and Innovation (CDEI) and the Office for AI but stresses that there is "an urgent need for practical guidance and enforceable regulation" especially in terms of data bias and transparency (ibid), as guidance alone "does not provide a strong enough incentive to change behaviour" (ibid: p.39). Jobin et al highlight that the proliferation of data ethics frameworks - particularly in the US and UK - marks a distinct governance response to data and AI characterised by soft-law or non-legislative policy instruments that are not legally-binding but persuasive in nature (2019: p.389). Raab and Szekely argue that this represents "a noticeable 'turn' from reliance on legal regulation to an emphasis on ethics" (Raab and Szekely, 2017: p.335). Further, the Committee on Standards in Public Life argues that regulators will not be able to meet the challenges posed by AI without guidance from a central body that possesses technical knowledge and expertise, and in order to overcome these shortfalls it recommends that the CDEI be given more power as a regulatory assurance body on statutory footing (2020: p.48) The CDEI would not act as a regulator as the ICO does, "but it would need full independence from government to advise objectively and without political interference" (ibid).

In addition, the power and enforcement capabilities of the ICO and other Data Protection Authorities (DPAs) are contested in the literature. The "mixed character" of DPAs has been well studied, for example Raab and Bennet identify seven different roles of DPAs encompassing ombudsman, auditor, consultant, educator, policy adviser, negotiator, and enforcer (2006: pp.133-143, cf Raab and Szekely, 2017: p.423). Jóri's analysis also ascribes multiple roles to DPAs, examining on the one hand a shaping role in which DPAs shape the legal environment as a privacy advocate and on the other the role of applying the law in two different ways: as a mediator by issuing ombudsman-style recommendations that are not legally-binding, and as an enforcer by issuing legally-binding decisions and orders (2015: p.134-135). Jóri also stresses that a properly functioning DPA does not avoid cases or decisions that might have a political effect (2015: p.137) but, as Raab and Szekely point out, the multiple roles of DPAs "may involve them in conflicts and compromise their core, compliance-related task" (2017: p.422).

In its review of AI governance, the Committee on Standards in Public Life asserts that ICO guidance "should be considered authoritative" and is satisfied that such guidance is sufficient to provide safeguards against automated decision-making and to provide explanations in public sector decision-making (2020: pp.43-44). At the same time, however, the Committee's above-mentioned recommendation that the CDEI become a regulatory assurance body is based on a perceived lack of technical expertise and knowledge among regulators such as the ICO (2020: p.48). Raab and Szekely (2017) also share this concern and their survey of DPAs found that "the present level of expertise available in the DPAs' offices is either not satisfactory or at least needs to be further enhanced" (p.429). More recently, a study of the enforcement capacity of European DPAs questioned the degree of tech specialist expertise at the ICO and thus its capacity to properly engage with tech issues (Ryan, 2020: p.11). Finally, the enforcement powers of the ICO have been called into question by commentators who have expressed disappointment with the regulator's handling of, e.g., its adtech investigation, and who suggest heavier, adversarial enforcement is still needed in this area (e.g. see Lomas 2020a and 2020b).

Participation and accountability

For Keller, oversight bodies do not enable adequate participatory accountability since the emerging data governance principles are "frequently imbued with a protective paternalism that excludes direct public scrutiny" and he suggests that regulatory and oversight bodies be made more open to citizens through closer cooperation with civil society (2019: p. 42 and p.45). For instance he argues that because there is no formal statutory basis for the public to bring an issue to the ICO's attention, except "in the form of a complaint concerning an infringement of the GDPR that relates to the personal data of the complainant", public access to and participation in oversight bodies is reduced to "ad hoc petitioning", such as Privacy International's attempts to get the ICO to address data broker GDPR infringements by submitting substantial complaint documents in November 2018 (ibid: p.42). Consequently, Keller suggests that formal channels for public engagement supported by statute are needed (ibid). The Committee on Standards in Public Life states that public engagement is needed in relation to oversight to "increase trust in government innovation and ensure citizens do not feel disempowered by new technology" (2020: p.66). Elsewhere, Keller and Drake suggest that oversight is not an adequate substitute for engaged citizens who wish to challenge AI decisions and argue that instead regulatory processes need to ensure that policies and decisions can be made subject to third party contestation to ensure democratic accountability in relation to data governance rules and standards (2020: p.4).

Community oversight models

In recent years several bottom-up, community driven oversight models have attempted to give citizens a direct stake in accountability and transparency processes relating to data technologies. Some of these models have introduced regulatory mechanisms or safeguards to mandate community oversight within the process of procuring and implementing new technologies. In the US, for instance, civil rights activists have advocated for surveillance ordinances in order to impose greater transparency and political oversight on public sector technologies as well as to prioritise public engagement and comment prior to the procurement or implementation of a particular technology (Katell et al 2020b, p.47). The first municipal surveillance ordinance was established in Seattle in 2013 and was significantly revised in 2017 to mandate the public disclosure of surveillance technologies in use by city government. Thanks to pressure and input from groups such as the American Civil Liberties Union (ACLU), it has strengthened community control by subjecting these technologies to a political process that includes community input and oversight (Katell et al, 2020b: p.47; Krafft et al, 2021: p.3). For example, the Seattle Ordinance's 'surveillance impact reports' (SIR) mandate input from both city officials and designated community representatives (Katell et al, 2020a: p.2).

However, some have argued the ordinances do not go far enough and have instead pursued bottom-up models developed outside of legislative contexts: for example, the Algorithmic Equity Toolkit developed by researchers from US and UK universities is a policy-focused toolkit for communities to self-determine algorithmic governance through policy engagement, and which seeks to centre activist voices as well as under-represented communities (Krafft et al 2021, p.3). The toolkit helps the public

to better understand algorithmic systems in order to feel more empowered in advocacy and decision-making in relation to algorithmic governance, and is aimed for use in organising and outreach, participating in public comment sessions and meetings, and assessing the impact of particular technologies (ibid).

Another emerging model of community oversight for algorithmic governance is the community facing task force. A prominent example is New York City's Automated Decision Systems Task Force that was established in late 2017 to develop recommendations for a framework for the use of and policy around automated decision systems in the city (New York City, 2019; Richardson, 2019: p.7). Public engagement was 'of utmost importance' to the process and the task force ran seven public meetings open to the public across the city's five boroughs (ibid: p.15). These forums were livestreamed and transcripts were made available. Based on this, the task force recommended the public discussion on automated decision systems be broadened, both by engaging with and educating the public (ibid: p.22). However, in the view of many of its members the task force failed and, in particular, members publicly stated that public engagement efforts were limited because community groups were not sufficiently involved in task force processes (e.g. see Richardson 2019 p.15).

More recently, the Pittsburgh Task Force on Public Algorithms was created in January 2020 by the University of Pittsburgh and is a coalition of researchers, community service providers, civil society and public and private sector stakeholders that has been tasked with producing best practices and guidelines for municipal uses of algorithmic systems (Pittwire, 2020). Community oversight is provided through two community outreach meetings, held in March 2021, and a public comments function on the Task Force's website (ibid).

Interview Analysis

Relations with Government and Industry

Relations between government and the major oversight and advisory institutions, including the CDEI, Turing Institute and ICO, are tight. CDEI, being funded by and accountable to government, has a close relationship with the Department for Digital, Culture, Media and Sports (DCMS). Some of the CDEI's work is subject to agreement with DCMS, but it is also free to work on areas outside of this agreement. Our interviewee from the CDEI felt that "we've got that relationship right in the sense that the programme gives us a great deal of flexibility within it". Yet the Centre itself is government facing in nearly all of its outputs and makes recommendations to government.

The ICO's priorities are shaped in part by the government. Further, data protection law requires that the government consult the ICO whenever new legislation involves the processing of personal data. The Turing Institute also works on government projects and has collaborated with the Office for AI and Government Digital Service, while also providing guidance for the Ministry of Justice. The Royal Society regularly interacts with senior decision makers, such as senior civil servants and the House of Lords. The Ada Lovelace is "trying to maintain very good connections with Government" and is open to doing work on behalf of or in partnership with it. However, as an independent organisation, its agenda is less closely influenced by government policy, which may lead to the challenge that their recommendations are less influential on policy change.

Relations with industry by these organisations are typically less close but include some engagement. The Ada Lovelace Institute seeks to be an "independent critical friend" while the Royal Society works with industry "a lot" and, according to our interviews, tries to foster connections between industry and academia. Some of its working groups also have business representation in order to "drive debate forward" by talking to companies as stakeholders. Interviewees from the Turing Institute, the CDEI and the ICO emphasised the guidance and advice presented to the private sector.

Accountability: Public Interest and Funding

Interviewees suggested that they are accountable either to the institution that funds their organisation, the public, or both. Interviewees from the Turing Institute, CDEI, Ada Lovelace and ICO all felt that their organisations try to be accountable to, or representative of, public interest. For instance, the Turing Institute interviewee said this organisation represents "the wider frame of those whose interests are affected by what we think about" and emphasised that "all of our work is definitely oriented to the public interest" and aims to work alongside government in order to strengthen "public welfare". Social science research by the Institute, e.g. on data ethics in child welfare, would be accountable "to everybody", while having a "research lens" meant the Institution "doesn't necessarily represent some type of partisanship".

Similarly, the interviewee from the CDEI noted that "our primary accountability is to the public at large", especially in terms of the accountability of enacting its mission "to enable AI to be used safely". For the Ada Lovelace Institute interviewee, it was important to bear public interest in mind but they stressed the Institute is not a "direct broker" between the public and policy makers or the public and the tech industry. Instead, public interest was described as "a guiding light" in institutional decision making. This interviewee said "I don't think we could be so bold as to say we represent the voice of the public but we certainly try to keep our mind to that as our kind of key stakeholder audience". The ICO, on the other hand, represents public interests more directly and is responsible to the public as it upholds their information rights, although ultimately the ICO is accountable to parliament. Divergently, The Royal Society is largely accountable to its elected science fellows and sees itself as representing "the scientific community across all different disciplines".

At the same time, though, how oversight bodies are funded also had a bearing on who interviewees felt their organisation was accountable to, which also raised the question of independent oversight. The CDEI interviewee said that "in a very literal sense, we're more accountable to Government than anybody else, because Government is paying for us". The Royal Society interviewee formulated this relation less starkly: "We have some funding from Government and we certainly fund a lot of research through Government money but we are an independent organisation". In a similar vein, the Turing Institute interviewee noted that "we understand that there's an agenda setting power whenever you're going to involve yourself with external funding and we're sensitive to that, we try to be aware of that". The Ada Lovelace Institute, in contrast, considers itself independent precisely because it does not receive government funding. This interviewee said: "we're one of the only organisations that are independent of private sector funding [...] and of Government contracts". They added that "I think that's actually really quite essential in this space, to have an independent voice that is not compromised or even coloured by any of those interests".

Influence and impact of oversight bodies

In terms of the wider influence and impact that oversight bodies have had, interviewees primarily discussed their normative influence, such as shaping discourse, providing advice and recommendations and establishing best practices. The ICO interviewee said "we like to work alongside organisations rather than be the heavy-handed regulator that relies on enforcement", preferring to use its enforcement powers only in "extreme cases". The Royal Society, for example, conducted a broad overview of the data governance landscape with the British Academy, culminating in the report 'Data Management And Use: Governance For The 21st Century', which sought to clarify best practices and anticipate new issues, and contributed to the establishment of both the CDEI and the Ada Lovelace Institute. Similarly, the way in which CDEI has sought to leverage influence has been to offer advisory support to external organisations, such as businesses and schools, by working alongside and in cooperation with them "to put in place ethical governance".

The Turing Institute has been able to influence AI guidance for the public sector at a national level since "we wrote the national public sector guide for ethical and

responsible use of AI and data science". The Institute also co-authored the ICO's explainability guidance and has been working with the Ministry of Justice and other organisations "to cultivate a kind of culture of applying data ethics in their practical environments." Arguably, the Ada Lovelace Institute has focused most strongly (amongst the organisations we spoke with) on affecting change. For example, the Institute has pushed for a moratorium on facial recognition technology in order to force a regulatory discussion, having conducted the first national survey by a non-police body of public attitudes towards facial recognition. However, this interviewee acknowledged that the advocacy for a moratorium has been "relatively unsuccessful in any substantive sense" as no company had publicly acknowledged their intention to stop selling the technology at the time of the interview. Having said that, they also pointed out that some institutions, such as the Met Police, did temporarily halt further rollouts of their own facial recognition pending public consultation.

Deliberative engagement

A prominent form of participation being advanced by oversight bodies in the UK is deliberative engagement by providing citizens, whether a random selection or members from a specific community or group, with the opportunity to participate in deliberative discussions about data and AI. The majority of interviewees discussed the use of mini-publics methods, especially citizen juries and assemblies (see also the chapter on models of civic engagement in this report). These are applied to facilitate discourse and listen to citizen views, in order to inform policy. They do not, however, give citizens a formal role in the oversight process. Further, this engagement tends to be done on an ad-hoc or one-off basis rather than representing a systematic or comprehensive approach to participatory oversight.

For the Ada Lovelace Institute, "public deliberation exercises" such as their Citizens Biometrics Council as well as citizen juries with Understanding Patient Data have been deployed to involve citizens in specific policy objectives, particularly discussing and determining how data driven technologies "should be governed and used and what principles should guide [their] governance". In this way, the purpose of deliberative engagement is to "get to the bottom of" what fair and ethical data use and governance means and looks like in practice and then make policy recommendations pertaining to this. While there is a commitment to giving citizens the opportunity to decide "how biometrics technologies such as facial recognition tech should be governed and used and what principles should guide its governance", the models applied have limited decision-making power.

Public engagement methods are also used to gauge public opinion. For example, the Royal Society has focused on facilitating "public dialogue" by "getting a broad view of a broad societal set of opinions" through roundtable discussions with relevant stakeholders as well as outreach discussions with particular groups, for example to find out if "the attitudes people had about machine learning and AI might be different if we were focusing on younger people rather than the general population." The focus on younger people has involved public events with schools in London and Manchester.

The Turing interviewee claimed they have a "much more direct approach to public engagement" and attributed this to the Institute's broader goal of facilitating deliberative democracy, including co-

production of policy:

> In most, if not all, of our work we are trying to integrate the need for deliberative democracy, participatory involvement and co-production of policy and orientation to technology.

While this interviewee referred positively to deliberative methods, the latter were primarily used for the Institute's own research rather than embedded in the function of oversight:

> We were funded by Nesta and What Works for Children's Social Care recently to do a review on the ethics of machine learning in children's social care [...] we incorporated both a stakeholder roundtable and a family engagement workshop so that we could at least, in a provisional or preliminary way, hear the voices of those who are impacted by machine learning technologies.

The Institute has also worked on a project with Camden City Council "to try to help them with building a citizens data charter or data ethics charter, that is intended or hoped to be co-designed with the participating citizens." The interviewee suggested that the "enrichment of the dialogue is giving [citizens] tools for critical reflection and engagement of issues [and] priming them to engage the impacts from an informed point of view." Further, they said that "developing our deliberative publics through engagement" can be "a bulwark for transforming those systemic issues in constructive ways", which they described as helping citizens to become "familiarised with what had seemed to them to be outer space entirely, something that was entirely foreign to them", i.e. machine learning processes. In this sense, public engagement exercises were regarded as important building-blocks of literacy development but not necessarily as institutional citizen participation in oversight processes.

Where the Turing Institute has advocated for more direct citizen involvement in how data systems are conceived and designed, it was unclear how much citizens would contribute to oversight functions. The interviewee highlighted the need for "inclusive participation" and "engaged oversight" but also raised questions regarding the limits of this due to the need for technical knowledge. The main role of citizens may therefore lie in democratically deciding and creating values and criteria for data systems:

> I share the view of the families we talked to, which is they feel that it's really important to think in terms of co-creation, co-developments, engaged oversight, in the sense that there is a kind of end-to-end transparency there where you might have oversight that's done at a technical level that exceeds what an engaged citizen might be involved in, but having that accessible to them in case they want to look at it.
>
> ... how are you defining your outcome? How are you going to locate the right proxy variable? I think we need inclusive participation in that conversation because the community will be impacted by those choices in a very direct way. So one would hope that there would be a democratically produced set of choices for those kinds of decisions.

Interviewees from the ICO and CDEI suggested that the purpose or benefit of increased participation may not be to include citizens in oversight or accountability procedures but to provide other functions. For the ICO interviewee participation enables citizens to question data practices through

"greater awareness of individual rights" that on the whole will reveal good data processing:

> I think the greater the citizen participation, the greater the awareness of individual rights, the more people can question practices and, in most cases, will receive reassurance that their data is being processed well and fairly and in accordance with the law.

This interviewee explained the need "to innovate" in including citizens, for example by using citizen juries, but concurred with other interviewees in highlighting the purpose of public opinion research. While the ICO "would always welcome the involvement of the public in the discussion around how things are moving" the purpose and value of this would be to align with strategic goals "about upholding and increasing public trust in how data's done." Individual complaints to the ICO are the primary way in which this organisation enables citizen participation. For this interviewee, participation in oversight thus relies on individual citizens leveraging specific rights pertaining to data rather than institutionalised mechanisms for collective decision-making over what and how data should be collected and used:

> But obviously if there are a greater number of people complaining than before, or making complaints to organisations than before, then that might actually raise more issues of bad practice or practice that could be improved. Again that's something that if the citizen remains dissatisfied with an answer that's been given, they can complain to us and we can take that forward, and I know that we have improved practice in a wide variety of organisations over the years in that way.

For the CDEI, deliberative methods and especially citizen juries were highlighted as "the right techniques" not for providing citizen-driven oversight but for navigating complex issues pertaining to data and AI. Public engagement work has been used as a way of finding out what citizen concerns are rather than directly involving citizens in CDEI's oversight processes:

> With the public engagement work, I think we started the groups with some completely unprompted, what do you like, what do you worry about, kind of stuff, but it certainly didn't flush out new things, and it certainly didn't raise the full list of horrors that we then presented them with that other people have said they think is potentially a problem about the use of targeting. So I don't think you can just use the public, as it were, as the source of truth about where the risks are.

Further, this was qualified with the suggestion that citizen participation in relation to algorithmic governance is not a current priority:

> I think we are going to have to think about how that public conversation happens around issues that are biased but right now, we're more focused on just enabling people responsible for the governance of algorithms having the tools they need to be able to do that job.

Instead, this interviewee explained that CDEI is focused on exploring what are "the policies that would empower individuals, as consumers of technology, to be able to ensure they could act in their own best interests as effectively as possible." .

Public education

To some extent oversight bodies are also able to support citizen participation by incorporating public education into their remit; for instance our interviewees from the CDEI, Ada Lovelace and Turing Institute all saw a direct link between participation and public education and suggested that informing the public is part of their role. These interviewees agreed that for meaningful citizen participation to occur a level of prior knowledge or public education is required, but the degree to which this is a feasible or desirable undertaking for oversight bodies proved a point of contention in the interviews. For the Ada Lovelace Institute, providing educational materials is integral to their mission of "engaging the public in a conversation about the impacts of AI and data driven technologies", and public education was framed as the necessary and natural starting point for public engagement work in order to be able to overcome the complexity surrounding data and AI:

> In order to know how technology can be fair and consistent with public expectation, we have to actually ask people and in order to ask people, we have to inform them such that they can engage in the debate to the level of complexity that is required because these are not clear cut questions.

The CDEI interviewee agreed with this in principle and said "for the public to be able to engage in this debate sensibly, there has to be a level of public understanding of what these technologies are and how they work", but there was also an indication that this presents an inherent challenge for oversight bodies and that CDEI is struggling with this in practice. While CDEI is "very interested in this problem of trying to increase digital literacy across the population as a whole", the interviewee felt that "there is no obvious answer as to how you go about those things". Further, they were concerned about possible biases in explaining challenging issues as "you don't want to end up in a position of trying to educate the public to believe you that this is the right policy." They also added that "you're trying to make people take in information when they've got lots of other things to do with their lives, it's a difficult thing to do."

This contrasted with the Turing Institute interviewee, who said "I think the barrier between citizens understanding the [data] science and not understanding the [data] science is not quite as high as some might say", describing this assumption as a "fallacy" because "it's just not the case from my experience [...] that nobody can understand this." They also took a more positive view towards the potential of public education, suggesting that "talking to people about data and data science can quickly make them able to reflectively engage the issues surrounding it" and can be empowering for participants:

> There was a dimension of empowerment that came with bringing the technological barriers down, or we could say the epistemic barriers to understanding the technology down and just allowing them to peer into what is actually happening.

Community oversight

Alongside institutionalised forms of technology oversight there are also bottom-up models emerging, particularly at the city and municipal level, that in principle give local communities more direct involvement in decision making processes regarding the implementation of data driven technologies. The New York City Task Force on Automated Decision Systems was described by the AI Now interviewee as ultimately unsuccessful but they suggested that community taskforce models do hold participatory potential and can be a robust method for strengthening public awareness:

> I think on paper, it's a model that could work but it depends on how... whether the government officials who have power over the process are acting in good faith and believe in it. [...] So I do think the taskforce model could be a great way of not only engaging the public but also educating both people and government and the public about what's going on, especially if they do a process of inviting experts from different disciplines, or with different domain experience to help highlight specific concerns, but it really just depends on who's running it and how much they care, and whether they have the skills and resources to do real public engagement.

Having said that, they also suggested that there were significant issues in relation to the inclusivity and accessibility of Task Force processes, such as not making meetings open to to public, a lack of public education around automated decision systems, and a lack of community outreach:

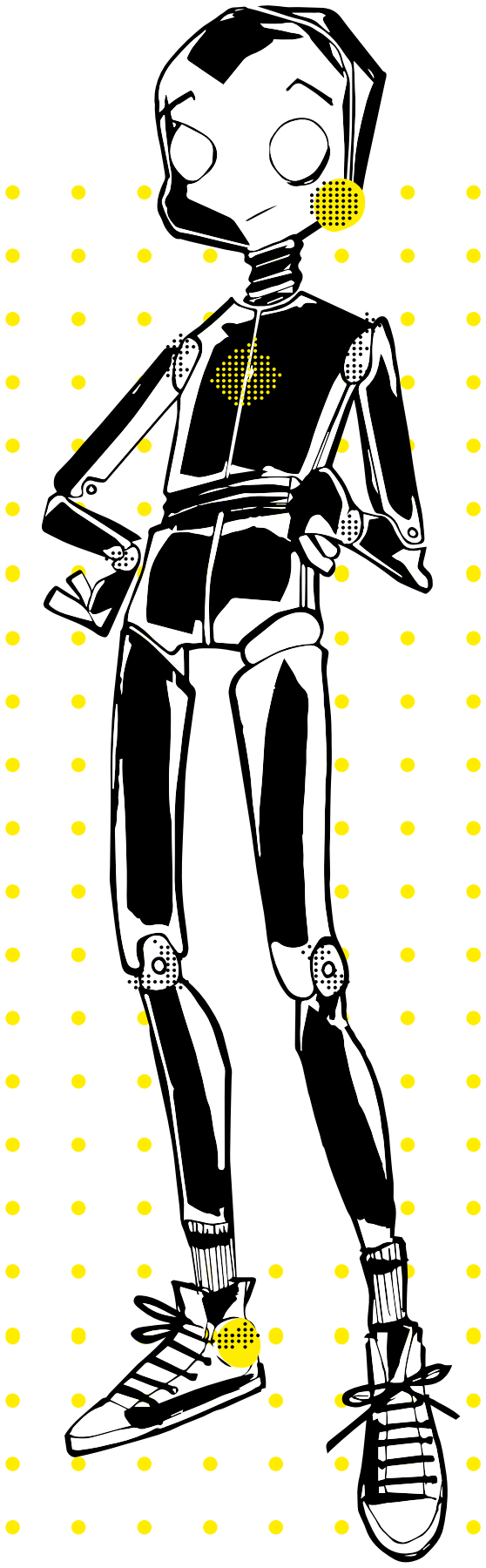
> The plan is that they're supposed to do a series of community meetings, but the issue is they haven't done any public education. They just have a website that states what the law is and only recently they added this checklist document which is overly technical and not really accessible to people but it was kind of like, how do you expect people to engage in a process when you don't even define what an automated decision system is on your website and press releases? And then they haven't really done any community outreach.

Further, the ACLU interviewee described the surveillance ordinance model as having the potential to give communities more involvement at the local level that also provides a source of accountability since it "mandates a public process any time any sort of technology is on the table that could gather personal information." Although this interviewee said getting buy in from local authorities to adopt and use the ordinances had been a challenge, they stressed that the value in this model is that it embeds communities in decision making processes regarding the implementation of surveillance technologies and provides a clear framework for local government to enact that involvement:

> I think [the ordinance model] works in the sense that there really aren't a lot of ordinances that say these decisions you're making are important and have a lot of potential consequences, and so therefore you need to really go through this process. [...] I think also local governments are under-resourced and so giving them a framework to be able to connect to communities and ask for input and get the information they need to get as council members who are going to vote on something.

At the same time, though, this interviewee raised questions about the extent to which ordinances enable meaningful citizen participation as they are a mechanism for individuals "to have a say" rather than a model for collective power or deliberation. They instead described surveillance ordinances as creating the initial conditions for participation:

> I think honestly it's a misnomer to call it community control, because they don't actually have control over the technology or even whether or not it's adopted, they only have a say. So communities can have a say through the public process in whether or not their elected officials actually chose to get it [...] So in a way it's very individualised to the individual residents, who would be weighing in, can all weigh in as individuals, so it's not like there's some model built into the system in which they actually deliberate together and kind of learn from one another. So I think that residents in some jurisdictions don't really have a lot of collective power they only have individual power.
>
> So I would say it's more like it's saying these are important decisions and governments should discuss them and have a public process and ask people to get involved, which is really like a first step in an iterative process towards a larger vision. And I don't think that the ordinance is the "model" in any way, it just creates the initial conditions to lead to other change and other decisions.



04 Civil Society Strategies

Literature Review

In this section we discuss civil society in the UK and explore key themes that shape its condition, not least with regards to digital rights advocacy. We focus here particularly on institutionalised civil society in the form of official organisations and associations that also dominate our interview sample for this part of the project. We start by outlining the current state of civil society in the UK and prominent challenges, before turning to the emergence of digital rights advocacy within civil society in the UK and beyond. This forms the contextual backdrop for our subsequent analysis of interviews with civil society groups about the potential for civic participation in relation to datafication.

The current state of civil society in the UK

Over the last few years the number of Civil Society Organisations (CSOs) in the UK has risen slightly but not significantly. In 2012 there were 161,300 registered organisations (Alcock, 2015: p.96) while the most recent figures, which are from 2017/18, point to 166,592 registered organisations (NCVO, 2020:p.6). However, these figures do not capture grassroots groups which are harder to identify through formal registers; for instance in 2012 there were an estimated 300,000 community groups (Alcock, 2015: p.97), while the latest figures suggest there are approximately 20,000 groups in Scotland alone (Scottish Council of Voluntary Organisations, 2020).

Many civil society organisations in the UK are currently grappling with reduced and uneven funding, partly brought on by the tripartite upheavals of the 2008 financial crash and resultant austerity policies, followed by the implications of Brexit, and now the impact of the Covid-19 pandemic. At the same time, studies also suggest that the structure of civil society funding is unequal and characterised by uneven distribution that prevents smaller and more informal groups from flourishing (Civil Society Futures, 2018a: p.62).

Austerity policies over the past decade have had significant consequences for CSOs. For example Alcock (2015) finds that the scaling back of funding under Prime Minister David Cameron's government represented a changed relation between the state and civil society and ultimately amounted to a 60% cut in the Office for Civil Society budget, leading him to comment that, by 2015, "there is really no longer any UK policy regime for the third sector" (ibid: p.107).
In terms of Brexit, studies from both the National Council for Voluntary Organisations (NCVO, representing England) and the Welsh Council for Voluntary Associations (WCVA), point to an uncertain future for CSOs as another important funding source, the EU, has been removed. As the WCVA points out, this is particularly the case for CSOs and their beneficiaries in several areas of Wales, as well as the North of England, as these have received the highest levels of EU funding - and the matched funding it attracts - and so will be most affected by any post-Brexit downturn (WCVA, 2019: p.3).

In terms of Covid-19, discussions so far indicate that CSO funding and income will be further reduced, and the sector is likely to shrink (NCVO, 2020: p.5). Research also suggests that the effect of the pandemic will be to amplify inequality within the sector.

According to Pro Bono Economics, which has been conducting a weekly tracker survey to find out how Covid-19 is affecting charities, most charities are expecting coronavirus to have a negative impact on their income "but smaller charities are most likely to fear large falls" (Whitehead, 2020). The survey results further suggest that BAME charities are more likely to expect to wait longer for their income to get back on track, less likely to have more than six months' income in reserve, more likely to have made staff redundant since the start of the pandemic and were more likely to expect to have to let more workers go once the Job Retention Scheme ended (Kenley and Whittaker, 2020: p.21).

Research from the Civil Society Futures inquiry found that the distribution of charitable funds "remains hugely uneven" geographically across the country (2019: p.4). The inquiry, which ran from 2017-2018, found that charity income is concentrated in southern England and metropolitan areas, with a disproportionate amount of that income residing with a small number of very large charities (ibid). In 2020 this was no different: the NCVO's annual almanac finds that the majority of voluntary organisations with large assets are based in London (NCVO: 2020 p.17). Alongside regional disparities in income, there is a growing gap between large, established CSOs and smaller ones, for example the NCVO finds that organisations with an annual income of more than £100 million account for 0.03% of all organisations and for 23% of the sector's income (2020: p.6). Similarly, research reports from Civil Society Futures show that funding systems and structures are felt to be inhibiting smaller, less professionalised, more informal projects and groups with less cultural capital "from surviving and flourishing" (2018a: p.62 and 2018b: p.22).

Challenges include accountability and representativeness, with 59 percent of charities saying that their boards are not representative of the communities they serve (Civil Society Futures, 2018a: p.59). A CSO member pointed out that "this means homeless charities with no one on the board with experience of homelessness, prison education charities with no one on the board who has been in prison, carers charities with no trustees with caring responsibilities and so on" (ibid). Overall, CSOs, especially large-scale institutional charities, need to be more in touch with communities (ibid: p.61). Other accountability themes raised in discussions on civil society are the need for more collaboration and connection, both between CSOs and within communities, and calls for value and behavioural frameworks to be more aligned with social justice ideas. For example Chamberlain et al (2020: p. 6) advocate for a future vision "rooted in the values and shaped by the traditions of what is best about civil society: community, kindness, fairness, respect, inclusion and above all an impulse to help". In 2009 Carnegie's Inquiry into the Future of Civil Society in the UK and Ireland highlighted the need to "change the terms of the UK's national value framework" which CSO research respondents felt had shifted away from a social justice agenda with local government "having to follow suit in most cases" (Craig, 2009: p.4). This research suggested the major obstacle to operating as social justice organisations was seen as structural: "society as a whole does not operate within a recognisable social justice framework" (ibid).

Some attribute growing civil society powerlessness to the peculiar nature of UK state and civil society relations, which have served to place civil society in a "subordinate role", especially compared to the entrenched position of the City of London as independent from both the government and the Treasury, giving "financial capital an ear in the corridors of power which NGOs lacked" (Wilson, 2017: paras 6 and 7). Alcock (2015) makes a similar case in his review of UK government civil

society policy, finding that the Conservative public spending cuts announced in 2010 coincided with a symbolic policy departure from New Labour's expansion of state support for CSOs to a more distant relationship, materialising in the withdrawal of access to decision-makers given to CSOs under Blair and weakening strategic unity within the sector (Alcock, 2015: p.99). However, even in 2009 the Carnegie UK Trust Inquiry into the Future of Civil Society in the UK and Ireland found "a rather embattled sector attempting to promote the values of social justice" (Craig, 2009: p.4).

Calls for change in the literature focus on increasing collective efforts and creating meaningful access to decision making processes, especially for those who face disadvantage (Civil Society Future, 2018a: p.40). For example the Civil Society Futures inquiry found "a deep desire for [...] codevelopment in decisions from the very start, as equal partners in power leading to forms of co-production, rather than decider and consultee" (ibid: p.38). Others have called for a Nordic-style civil society model that would place "renewed emphasis on the membership base of organisations and a recognition of the huge resource that that offers for volunteering and active campaigning in times of financial stringency" (Wilson, 2017: para. 29).

Digital rights in civil society

As a way to engage with civil society involvement in datafication, we now briefly focus on a particularly relevant sub sector of civil society, namely digital rights. Our concern here is specifically with the orientation and nature of strategies that have traditionally marked digital rights advocacy and activism, especially in the UK and Europe. With roots in the values of the Free Libre Open Source Software movement (FLOSS) and the introduction of "repressive" copyright laws (Postigo, 2012), digital rights is often linked to the "politically oriented extension" of hacker culture that conceived software as a public good and campaigned for free access to source code for the benefit of "all humanity" (Breindl 2011: p.348). Both Breindl (2011; 2012; 2013) and Postigo (2012; 2013) have historicised the emergence of digital rights as an orientation within civil society as a response from FLOSS supporters to copyright and intellectual property reform, positioning them in opposition to government and industry attempts to restrict access to knowledge and free culture (Breindl, 2013: p.1420). In fact, as Breindl highlights, digital rights activism was for some time synonymous with copyright-reform activism (2012: p.26), while also proposing "an original mix of open source, enlightenment, and libertarian frames" (2011: p.43). As digital rights activism evolved, it also gained currency in institutional settings, such as during the 2003 and 2005 phases of the UN World Summit on the Information Society, where it intersected with the broader agenda of communication rights (Ó Siochrú and Girard, 2003). Digital rights activism also gained prominence in internet governance debates, which Daskal attributes to a proliferation of rights-based internet proclamations developed by international organisations or multi-stakeholder coalitions, such as the Global Network Initiative Principles from 2008, and The Declaration of Internet Freedom from 2012 (Daskal 2018). Such proclamations propose a loose conception of digital rights as the right to access, freedom of speech, and the right to privacy (ibid). Ruppert and Isin similarly identify these three rights "as the most often debated digital rights" but add openness and innovation to their understanding of "digital rights in cyberspace" (2015: para. 1).

Historically, three clusters of strategies are prominent in relation to digital rights campaigning: institutional lobbying, litigation and citizen engagement and mobilisation. In her recent comparative study of four digital rights NGOs, Daskal finds that these organisations largely advocate for citizens' digital rights across three areas: judicial, political and public (2018). In the political and judicial arenas NGOs promote legislative initiatives and file lawsuits against government and internet bodies when these infringe on or restrict digital rights. In the public arena, Daskal highlights that digital rights groups take on the role of educators and engage the public by providing them with practical advice and tools for digital self-protection, such as the Electronic Frontier Foundation's (EFF) Privacy Badger. Other public engagement strategies include recruiting non-financial help and support for their goals, especially during public campaigns, and requesting money through different channels, such as donations, merchandising, and membership fees. In some contexts, public engagement campaigns blur "the line between citizen activism and lobbying," as citizen mobilisation may be considered as valuable, but needs to be complemented by industry, academic or institutional analysis and support (Briendl 2013). As such, citizen mobilisation is solely one aspect of digital rights campaigning, as a way of easing access to decision-makers directly, and engaging the public remains a challenging strategy for digital rights NGOs, in part because of a perceived lack of knowledge and relevance amongst members of the public (Daskal

2018). Indeed, the Digital Freedom Fund recently reflected on European digital rights strategy, noting that "many organisations want to achieve massive mobilisation, while few have managed to develop the tools and means needed for fulfilling this goal" (Fernandez, 2019: para. 2).

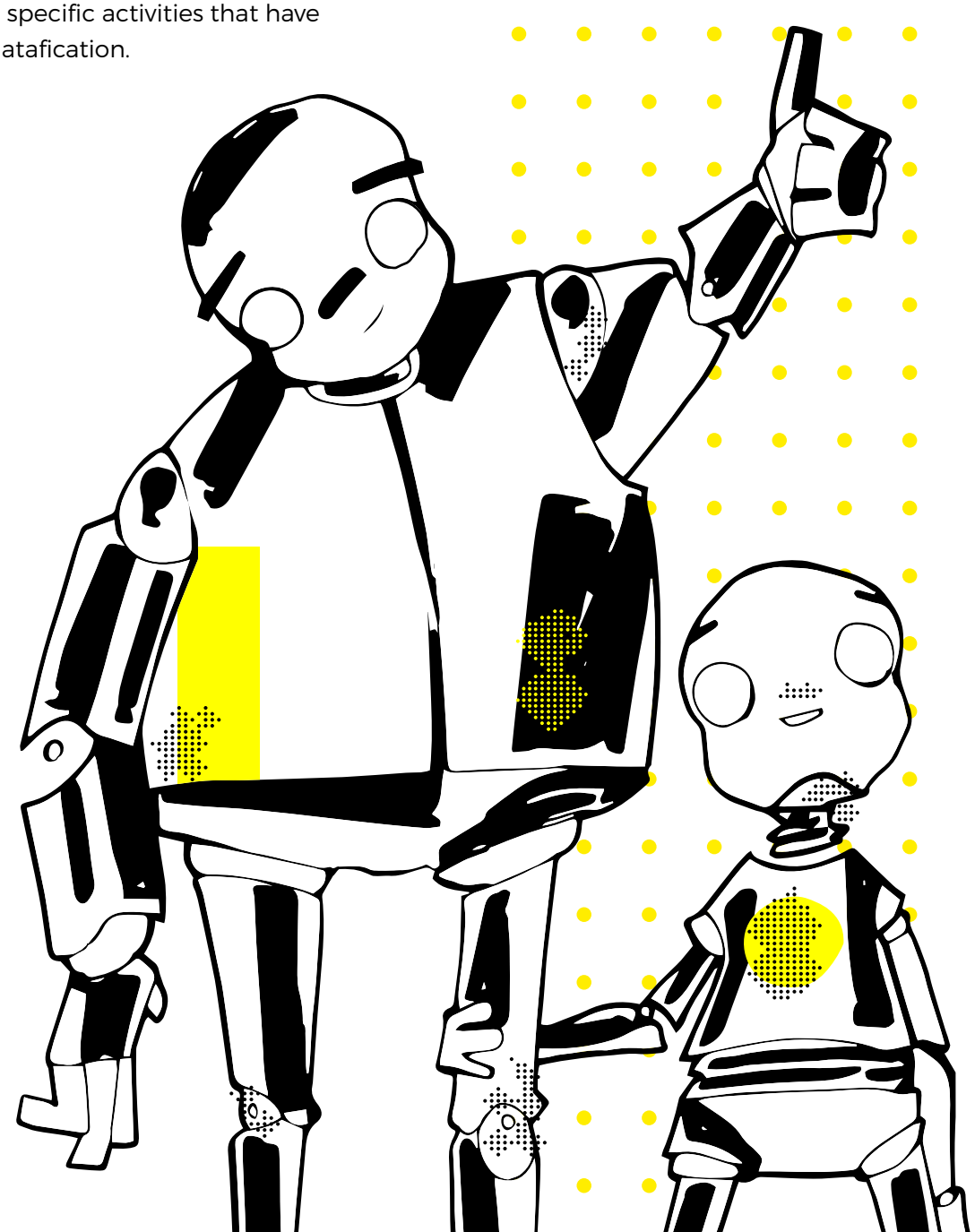
The strategic approaches of digital rights activism connect with established categories of civil society activism that have been analysed in the academic field of social movements studies. Theorists have typically distinguished between 'insider' and 'outsider' strategies, with 'insiders' interacting directly and cooperatively with power-holders through advocacy, lobbying, and participation in policy debate, and 'outsiders' questioning the legitimacy of power-holders and addressing them instead through protest and disruptive action (Tarrow, 2005). While the two approaches are often politically and ideologically opposed to each other, research suggests that a combination of grassroots mobilisation 'outside' with lobbying 'inside' has often yielded the most promising results as it complements advocacy with public pressure (Hackett & Carroll 2006; Pickard 2015). Scholars have investigated how civil society groups define problems, set agendas, prescribe solutions, and hold institutions accountable to previously stated policies and principles, and thereby shape and alter the norms that underpin policymaking. Key strategies for success have included the creation of conceptual frames which articulate the characteristics of an issue to policymakers; securing powerful allies both within and outside an institutional arena where policy is made; and the creation of networks and collaborations across movements, both domestically and transnationally (Keck & Sikkink 1998; Khagram, Riker, & Sikkink 2002).

However the binary model of inside-outside activities has been criticised for its inability to cover the full range of civil society activities, particularly in the field of media, communication, and digital rights. Media activists have often focused on the creation of alternative infrastructure that bypasses regulatory obstacles, or indeed (as noted above) on developing tools for self-protection, rather than either lobbying or mobilising for digital rights. This prefigurative approach points to interactions with the policy environment that take place neither 'inside' nor 'outside' institutional or governmental processes, as they do not directly address power-holders. Hintz and Milan (2013) tentatively called this a 'beyond' (policy-oriented activism) approach that creates alternatives to hegemonic structures and procedures and adopts a tactical repertoire of circumvention. Further, civil society initiatives have applied prefigurative action by developing regulatory proposals, formulating legal texts and creating model laws. This practice of 'policy hacking' (Hintz 2016) breaks up the classic division between, on the one hand, those that develop policy (typically governmental institutions) and, on the other hand, those that provide normative input and public pressure (typically civil society). It relates to a wider trend of crowdsourced policymaking (Aitamurto & Chen 2017).

Questions of representation (see above) have also entered the digital rights arena, not least with regards to who digital rights apply to. Isin and Ruppert (2015) note that "the figure of the citizen, which is a fundamental figure for conceiving politics and rights in cyberspace, is practically absent from the digital rights discourse. The key question, 'Who is the subject of digital rights?' goes amiss" (2015: para 10). A tentative answer to this question might be found in Daskal's argument that digital rights NGOs aim to create a "digital rights identity" or "glocal citizen-consumer identity", which is anchored to an individual's awareness of their rights and is a hybrid of citizen and consumer. Within this identity no qualitative difference is drawn between various forms of political

action: "conventional civic participation such as sending an email to one's representative is treated on a par with engaging in consumerism; both these actions are considered to be a form of political activism" (2018: p.252). Furthermore, there continues to be an emphasis on technical expertise in digital rights advocacy that underpins perceptions of exclusivity and elitism as markers of digital rights amongst the public and wider civil society (Hintz et al. 2019).

As this brief overview shows, digital rights activism in the UK has built on strategies established in the wider range of civil society but has faced both sector-specific and national-political challenges. In the following, we will map specific activities that have addressed datafication.



Mapping Civil Society Strategies

When it comes to questions of datafication, we have seen a range of different civil society strategies emerge that encompass digital rights groups and beyond. Based on a combination of desk research and interviews with civil society organisations, we map some of the more prominent examples in the UK, with a few international comparisons.

1. Policy advocacy

Policy advocacy in this context refers to the strategy of civil society organisations advocating for a particular data policy or regulation to be implemented, reformed or overturned.

School pupils' data

Article 80(2) is the General Data Protection Regulation (GDPR) provision which allows NGOs to represent data subjects collectively and without seeking a mandate from them, while the more limited Article 80(1) helps individual data subjects to seek redress from organisations when their data has been lost or misused (Rice, 2020). Civil society groups have repeatedly advocated for the former provision to be transposed into the UK's Data Protection Act (2018). For instance, in 2017 in an open letter to then secretary of state Matt Hancock, leading digital and consumer rights groups (including Open Rights Group, Privacy International, Which?, AgeUK and Financial Services Consumer Panel) asked for this right to be implemented to 'give consumers the voice they deserve when holding companies to account for loss of data' (Open Rights Group, 2017b). Ultimately Article 80(2) was not transposed into the UK's Data Protection Act 2018, but provisions were set out for a review process; this review has now concluded after a consultation period between August and October 2020 during which 345 submissions were made (Rice, 2021). According to ORG "the vast majority" of these supported the introduction of Article 80(2), however the government decided in early 2021 not to implement this right (ibid).

2. Cross-sector campaigns

This strategy involves civil society organisations from across different sectors partnering together to carry out public awareness and media campaigns about data related issues in collaboration with each other.

School pupils' data

A successful cross-sector campaign was the effort to stop the Department for Education collecting school pupils' nationality and country of birth data as a means of enforcing

immigration control under the hostile environment agenda. Schools Against Borders for Children (ABC) was established by parents and schoolteachers in 2016 specifically to fight the policy and was joined by Defend Digital Me and Liberty in the campaign to overturn it. One of ABC's first actions was to pen an open letter to then Education secretary Justine Greening calling for her to reverse the requirement on schools to collect immigration data but also advocating for the government to be mindful of both children and families' right to privacy and the rise of xenophobia in the UK (ABC, 2016). A wide range of civil society groups signed the letter including Privacy International, the Refugee Council and the Latin American Women's Rights Service (ibid).

Amid mounting pressure from these civil society groups, the Department for Education officials met with ABC in November 2016, which led to the decision that the collection of data on nationality and country of birth would not be extended towards children aged two to five, despite previous Government guidance stating the contrary (Pells, 2016). As a protest move in early 2017 Liberty Director Martha Spurior and ABC sent a joint email to every headteacher in England, calling on them to inform parents that they have the legal right to refuse providing the data (Whittaker, 2017a). Also in 2017 ABC launched a legal challenge, represented by Liberty, on the grounds that the policy infringes the rights of pupils and serves no "educational purpose" (ABC, 2018).

Care Don't Share campaign

Liberty also launched a "Care Don't Share" campaign in December 2018, which called on public sector workers, unions and members of the public to sign a pledge in support of a data "firewall" to stop data sharing between public services such as education, health and social care and police forces, the Department for Work and Pensions (DWP) and HM Revenue and Customs (HMRC) with respect to employment records and welfare benefits, and immigration enforcement (Liberty, 2018c). The campaign was supported by the National Education Union and Runnymede Trust (ibid), as well as the Platform for International Cooperation on Undocumented Migrants (PICUM). Just three days after Liberty launched the campaign the National Police Chief's Council announced they were agreeing to new guidance on data sharing with Immigration Enforcement about victims of crime who are identified as being in the UK illegally (Electronic Immigration Network, 2018). The policy, titled "Information Exchange Regarding Victims of Crime With No Leave to Remain", was seen as a return of a "wall" between the police and the deportation authorities (Dodd, 2018).

Immigration exemption

Several groups campaigned unsuccessfully to get the immigration exemption removed from the UK government's data protection bill (Schedule 2, Paragraph 4) including Liberty, Open Rights Group (ORG), the3Million and Migrants' Rights Network (MRN). Both Liberty and the3million opposed the exemption on the grounds that it creates a "two-tier data rights regime" (Liberty, 2018e; the3million, 2021); however they did so from different platforms, with the3million representing EU citizens rights while Liberty's campaign was part of its broader opposition to the Hostile Environment policy, citing a disregard for human rights and privacy. Liberty also referred to racial discrimination in

its campaign and formed a coalition with the Joint Council for the Welfare of Immigrants (JCWI) and the Race Equality Foundation in order to put pressure on the House of Lords to remove the exemption in October 2017 (Liberty, 2017). Despite these advocacy efforts, however, the exemption was not removed, resulting in the (successful) decision to use strategic litigation instead (see "strategic litigation" section below).

3. Data rights tools

Several civil society groups have created practical, easy-to-use tools and resources to help citizens exercise their data subject rights and to promote informational self-determination.

Digirights.info

In Finland Digirights.info offers free online courses which promise citizens "more control over your digital life" by providing the skills and knowledge to exercise GDPR rights. These include the right of access, the right to erasure and using subject access requests (SARs). SARs also perform a compliance verification strategy for Digirights in the sense that citizens can use the website to provide details of any SARs they make and the feedback they receive from organisations, including how long the organisation took to respond. This is offered as a way to "collectively identify organisations not complying with GDPR" and helps Digirights to build a case for legal proceedings with the relevant Data Protection Authority (DPA).

Bits of Freedom: My Data Done Right

Dutch digital rights group Bits of Freedom launched My Data Done Right in October 2018, a web based tool that helps citizens to exercise four GDPR rights: enabling access requests, correction of data, removal of data and moving data under portability rights (Bits of Freedom 2018; My Data Done Right website, 2019). The tool is presented as a means for citizens to "take control" and is designed in the form of a multi-step questionnaire guiding users through the process, with requests automatically generated based on users' input (Bits of Freedom, 2018). Responses are sent directly to the users and not to the tool platform, which does not hold any of the data. The tool also has an optional way for citizens to get a reminder to send a follow up letter if they don't get a response.

Citizen lab: Access My Info

The Canadian research institute Citizen Lab has developed a similar web based tool in collaboration with Open Effect to help Canadian citizens exercise their data access request rights (DARs – roughly equivalent to SARs in Europe), with three categories of companies: dating, fitness trackers, and telecommunications. However in a 2018 research report Citizen Lab wrote that DARs are "limited in what they can reveal about a company's data handling practices" adding that "a greater degree of

insight into company data practices can be achieved through research that compares DAR responses to technical analysis of data flows, corporate privacy policies, and external documents, such as those held by law enforcement agencies." (Citizen Lab, 2018: p.6). Others have used the Access My Info template to launch similar projects in Australia, Canada, Hong Kong, Indonesia, Malaysia, and South Korea, helping to advance public knowledge about how citizen data is processed (Kenyon, 2019).

4. Strategic litigation

Strategic litigation, also known as impact litigation, refers to lawsuits brought by civil society organisations to effect wider change in society. In relation to data, this means that lawsuits will affect entire groups or populations rather than individual data subjects.

Bij Voorbaat Verdacht and SyRI

In the Netherlands in March 2018 a coalition of privacy and civil rights groups brought a lawsuit against the Dutch government's use of System Risk Indication (SyRI), a data analytics system used to assess risk of welfare abuse and tax fraud which critics say places all citizens under general suspicion (Public Interest Litigation Project, 2015). Coalition members were the Platform for Civil Rights Protection, Privacy First, Dutch Lawyers Committee for Human Rights (NJCM), Federation of Dutch Trade Unions, and the KDVP Foundation (which campaigns for privacy in mental healthcare). However the coalition used the European Convention of Human Rights (ECHR) and not the GDPR as its legal basis to challenge SyRI, claiming that SyRI was in conflict with the right to privacy set out in Article 8 of the ECHR as well as the right to fair trial, and also that there are insufficient safeguards to prevent the risk profiles being deployed in other contexts, violating the Data Protection Principle of purpose limitation (Braun, 2018). In February 2020 the District Court of the Hague ruled that the legislation governing the deployment of SyRI violates higher law and does not comply with Article 8 of the ECHR (Privacy International, 2020).

Migrants' Rights Network and Liberty

In the UK the NGO Migrants' Rights Network (MRN) - represented by Liberty and law firm Matrix Chambers - took legal action against the Home Office over its data sharing arrangement with NHS Digital. Under the hostile environment policy a backroom deal was struck in November 2016 between the Home Office and the NHS, described as a "memorandum of understanding", to give the former access to confidential patient information to aid immigration enforcement (Liberty, 2018d). MRN and Liberty both said they did not believe the arrangement was legal or ethical while adding that the deal "violated patient confidentiality, discriminated against non-British patients and left seriously unwell people fearful of seeking medical care", as well as violating patients' right to privacy under the Human Rights Act (ibid and Electronic Immigration Network, 2017). In May 2018, as a result of the challenge, the government agreed to suspend most of the data-sharing arrangement and limit its use to tracing

those being considered for deportation because they had committed a serious crime (Bowcott, 2018). Then, in November 2018 NHS Digital confirmed that it would withdraw completely from the arrangement.

Open Rights Group and the3million

After an unsuccessful campaign to remove the immigration exemption from the 2018 data protection bill, Open Rights Group (ORG) and the3million launched a judicial review in summer 2018 to challenge the government's decision to keep the exemption. Specifically they called for the courts to declare the immigration exemption incompatible with the GDPR and Charter of Fundamental Rights (ORG, 2018b) on the grounds that it would "unnecessarily restrict the rights of millions of people across the country for the purpose of 'effective immigration control'" (ibid). In January 2019, permission was granted for a full hearing of the judicial review application to go ahead, which aimed to remove the exemption in its entirety (Electronic Immigration Network, 2019). In order to seek the review the two groups used crowdjustice.com to raise £40,000 through crowdfunding and, in May 2021, the court of appeal unanimously found that the UK immigration exemption is incompatible with Article 23 of the GDPR (ORG, 2021a).

5. Engagement with the Information Commissioner's Office (ICO)

Civil society organisations have interacted with the Information Commissioner's Office, for example by making official complaints to the ICO in order to expose problematic data processes or practices, and by making public demands, for example through press releases or open letters, for the Commissioner to take action in support of the organisation(s).

Privacy International, ORG, Johnny Ryan, Michael Veale, Panoptykon Foundation and others: Adtech complaint

Several civil society organisations have lodged formal complaints with the ICO (and other DPAs across Europe) with regard to data brokers, the adtech industry and the practice of Real Time Bidding (RTB). In September 2018 the academic Michael Veale together with Jim Killock of ORG formally complained to the ICO about the systemic breaches of the GDPR by the AdTech industry, focusing on the role of the IAB (Internet Advertising Bureau), a trade industry body, as the rule setter (ORG 2021b). Subsequently, in November 2018 Privacy International filed complaints against a cohort of seven data brokers, ad-tech companies and credit referencing agencies with data protection authorities in France, Ireland, and the UK arguing that these companies do not comply with the Data Protection Principles of transparency, fairness, lawfulness, purpose limitation, data minimisation, and accuracy (Privacy International 2018a).

In response to the complaints from these groups the ICO launched an official investigation into the adtech industry and held a 'fact finding forum' with stakeholders from adtech, civil society and law in Spring 2019 (ICO 2019a; ICO 2019b; O'Donoghue and O'Brien 2019), in order to understand

differences in opinion and discuss 'concerns about how people's personal data is used in real-time bidding in programmatic advertising' (ICO, 2019b). The investigation found that Adtech companies collect and share people's browsing histories but have no practical control where this information ends up, making basic data rights like consent and access to data impossible, and that the industry's legal basis for data processing is questionable (ORG, 2021b). In addition, the ICO took enforcement action against Experian, issuing an enforcement notice and requesting the company to achieve compliance with data protection laws within nine months (Privacy International, 2020). However, in 2020 the ICO paused the ongoing investigation amid the Covid-19 pandemic and also closed Killock and Veale's original 2018 complaint, and although it has since resumed the investigation again in January 2021 it has done so without the complaint (ORG 2021b).

Amnesty International and Gangs Matrix database

After publishing the findings of its research regarding the gangs matrix database, Amnesty called for the ICO to launch a full, public investigation into the gangs matrix database (and other gangs databases in England), on the grounds that it contravenes data protection principles one to six (Amnesty International, 2018). Subsequently in October 2017 the ICO began an investigation and found that the use of the Gangs Matrix 'led to multiple and serious breaches of data protection laws' (ICO, 2018b). The ICO said that whilst there was a valid purpose for the database, the inconsistent way it was being used did not comply with data protection rules and carried the potential 'to cause damage and distress to the disproportionate number of young, black men' (ibid). Further, it found an 'absence of a Equality Impact Assessment that would enable MPS to show it had considered in this context the issues of discrimination or equality of opportunity' (ibid). Consequently, the ICO issued an enforcement notice to the Met Police (see ICO, 2018a) which brought an end to sharing personal data on the Gangs Matrix with third parties where there is no individual sharing agreement in place. The Met Police have also 'committed to being more open about the database and are working with [the ICO] to complete a Data Protection Impact Assessment' (ICO, 2018b).

6. Investigations

Both Freedom of Information (FOI) requests and Subject Access Requests have been utilised by civil society groups wishing to investigate public sector data practices and hold them accountable.

Big Brother Watch (BBW)

In early 2019 BBW launched an investigation into automated decision making in the welfare system, part of which aimed to explore Universal Credit and automated risk scores and called on affected members of the public to exercise their right to subject access requests in order to find out how their data is being used in Universal Credit decisions (BBW website 2021). As part of its investigation BBW also sent over 1,000 FOI

requests to more than 400 local authorities about their uses of AI, algorithms and big data in decision-making but "were unable to gain a comprehensive picture of authorities' use of technologies in welfare" (BBW blog post, Nov 2018; Carlo and Hurfurt, 2021: p.5). They attribute this to systemic shortfalls including "a lack of shared definitions and understandings of new technologies within authorities" (Submission to Special Rapporteur, 2018: pp. 9-11). As a result, subject access requests are seen as a complementary research method (Big Brother Watch, 2019). BBW's 2021 Poverty Panopticon report further notes that "the influence of private suppliers in the FOI process is evident [and] there has been a pattern of identical responses from different authorities on the same issues that suggests coordination, possibly from a third party supplier." (Carlo and Hurfurt, 2021: p.6).

Defend Digital Me

With regards to the DfE sharing pupil data, the founder of Defend Digital Me Jen Persson began a lengthy FOI process in 2014 in order to investigate the National Pupil Database, after the government announced changes proposing that individual pupil-level records could be given away to third parties. Initially, Persson submitted a subject access request to the DfE to ascertain what data was held about her children, but this was refused. In total Persson has submitted over 80 FOI requests using whatdotheyknow.com; in 2015 discovering that children's personal data was being shared with newspapers and in 2016 uncovering that the data was being shared with the Home Office to support the hostile environment policy (Nixon, 2019). Information gleaned from the FOI requests helped to inform successful campaign efforts around DfE data sharing and meant campaign groups like ABC and Defend Digital Me could leverage the findings to oppose the government and raise awareness. Persson believes that FOI requests are a more valuable tool for providing transparency and accountability than SARs (ibid).

7. Resistance through data protection

This strategy refers to civil society organisations calling on the citizens they represent or the public to leverage specific data rights, such as the rights to refusal and retraction, to resist unjust government data policies.

National Union of Teachers

Less often, civil society groups have protested data collection using the data protection rights of refusal and retraction. During the campaign against the DfE's sharing of pupil data with police and the Home Office, for instance, the National Union of Teachers (NUT) passed a motion at their annual conference in April 2017 requiring the union to challenge the government's use of the data, and help schools inform parents "that they are not required to provide census information even though the schools are required to ask for it" (Adams, 2017). According to Schools Week, by December 2017 schools had failed to obtain nationality data for 22.5% of pupils "indicating a significant resistance" (Whittaker, 2017c).

Defend Digital Me and Against Borders For Children

Both Defend Digital Me and ABC urged parents, pupils and schools to retract any previously collected data to "boycott the census and resist the hostile environment" during the period 2016-2018 (ABC, 2019). As ABC explains, data can be retracted by contacting the school administrator in writing "to demand that this data is not retained for your children at your school and that it is withdrawn from the Department for Education at national level and from other data transfers to Local Authorities or shared datasets", but ABC also recommends following up any correspondence with a request for written assurance that the data has been deleted (ibid). Defend Digital Me provided a template letter for parents and pupils on their website.

8. Engaging frontline workers

In response to the increasing datafication of public services civil society organisations are seeking direct contact with frontline workers, such as social workers and debt counselling agencies, in order to firstly understand the impact of data driven systems, and secondly to better reach, represent and work on behalf of affected social groups.

Child Poverty Action Group (CPAG)

Child Poverty Action Group has regular contact with welfare rights workers and other practitioners in the welfare system so as to back up their policy advocacy and research with lived experiences. This ensures their advocacy work has legitimacy and reflects what the actual systemic issues are.

Algorithm Watch

Algorithm Watch has identified a need for input from social workers, civil servants and debt counselling agencies to inform their research. Having access to frontline workers is seen as facilitating representation of the most affected and marginalised groups in campaign work. Depending on resources this could involve approaching social workers and debt counselling agencies who have direct contact with affected groups.

9. Cross-sector collaborations

Civil society has formed umbrella coalitions involving both digital rights groups and civil society organisations from other sectors, which has bridged the gap between digital rights issues and other social justice issues. This has helped organisations to raise awareness and gain more traction for a particular campaign, but it has tended to take the form of ad hoc rather than formal alliances, with a focus on specific contexts, topics and needs.

MRN, PPR, ABC and Defend Digital Me

MRN has helped to build stronger connections between refugee networks

and privacy rights networks in the light of the data sharing taking place under the hostile environment policy. Participation and the Practice of Rights (PPR) collaborates with others depending on the context, for example with labour unions and social security workers. Schools Against Borders For Children (ABC) successfully collaborated with Defend Digital Me, teachers, parent groups and anti-racism and migrants rights organisations in the campaign against pupil nationality data being collected for immigration enforcement purposes.

10. Community organising

Some civil society organisations are active in local networks and communities and do work on the ground with local activists and residents in order to empower people to exercise their rights or engage in campaigning.

Participation and the Practice of Rights

PPR brought community members together for their Suspect Communities campaign about the surveillance of social security and benefit claimants.

Interview Analysis

Civil Society Challenges and Needs

Having mapped some of the prominent civil society strategies for engaging with datafication, we now turn to some of the challenges facing civil society organisations in the context of datafication and what they see as key areas that need addressing.

It's difficult for civil society to scrutinise and affect policy in real time

Many interviewees spoke of the difficulty of scrutinising and impacting live policy, which forces civil society groups to retrospectively seek justice and affect change. For example, methods such as Subject Access Requests (SARs) and Freedom of Information Requests (FOIs) have a time delay and for the latter there is a caveat which stipulates that information pertaining to live policy cannot be given out, which according to the Defend Digital Me interviewee weakens the usefulness of FOIs since live policy making "is exactly what you're trying to influence." Although this interviewee highlighted both of these methods as useful for exposing the truth about the Department for Education's data sharing arrangements, this was again retrospective; explaining that FOIs and SARs are "more about fixing something after the event or being able to make an appeal" after "your rights have already been infringed." Further, the Migrants' Rights Network (MRN) interviewee 2 pointed out that although SARs have been a useful tool for migrants to scrutinise how their data was used by the Home Office to make decisions about them, it was "unfortunate" that migrants were forced to challenge or appeal decisions after the fact and instead of checks being accurate from the outset.

The lack of transparency and secrecy surrounding both local and national government uses of data also presents an obstacle for civil society groups who have to investigate retrospectively, after the implementation of data policies and technologies. For example the MedConfidential interviewee spoke of how difficult it was for them to understand anything about Sunderland City Council's use of Palantir's data analytics platform, resorting to "inferring" from "passing references" in Council meeting minutes. MRN interviewee 2 also highlighted that the secrecy of hostile environment data sharing agreements prevented MRN and other groups from properly scrutinising their impact before they were implemented:

> Why aren't [the government] allowing it to be openly scrutinised, openly assessed? Let's check what the impact is of these things and assess them against would you allow this to happen for a normal citizen; in which case if you wouldn't, why is it okay for it to be allowed to be in place for migrants and any other group? (MRN 2)

In addition, institutional processes such as calls for evidence, submissions and consultations that are supposed to enable civil society input into policy making are seen as flawed and ineffective. For instance, the Participation and the Practice of Rights (PPR) interviewee described a campaign in

Northern Ireland that is calling for impact assessments to be introduced before social security assessments are carried out in order to reverse the "punish now and investigate later" attitude they see informing decisions. Similarly, the MRN interviewee 1 was critical of the call for evidence procedure because they thought there are "cases when the call for evidence can be actually harmful because it basically justifies an implement first and let's see later attitude." They felt that a thorough assessment of risks and impact should proceed policy implementation because, as with the sharing of migrants' NHS data with the Home Office for immigration enforcement, it's a challenge to rebuild trust "after the fact." Further, they also thought that in this instance the evidence that groups such as MRN provided was deliberately not listened to. For Defend Digital Me, consultations and submissions are written processes that rule out potentially more effective avenues such as speaking to a panel in person, while "it's also hard to know the impact your consultation submissions had unless they're published in reports". Corresponding with relevant parliamentary committees is limited, this interviewee added, because "it's up to them whether they choose to engage and make a difference through it."

Rights-based strategies produce mixed results

Our interviewees pointed to mixed and often unpredictable outcomes when it comes to civil society engagement with laws and regulation. The PPR and MRN interviewees both thought that looking for potential legal challenges was an important part of their work that enables them to scrutinise government policy. Having said that, this interviewee also implied an aspect of unpredictability and contingency in litigation, highlighting that in the legal challenge MRN initiated against the hostile environment data sharing arrangement between the NHS and the Home Office, "we were fortunately successful in this strategy but equally it could have gone the other way." Further, the MedConfidential interviewee talked about the difficulties in pursuing human rights cases as a civil society organisation. For instance, despite his view that human rights "underpins everything" they said that cases involving them are "a thing of last resort in the campaigning world because they take about seven years." They added that even though this might bring about positive change in the end, "you need meaningful change sooner than that in most instances."

Some interviewees discussed citizens' awareness of rights as being a "vital starting point" and "first step" in challenging data driven technology and harm in relation to this, but ultimately not always sufficient for affecting change. For example, the PPR interviewee said helping citizens to become aware of their rights is an important strategy for PPR and talked about equipping people with tools like SARs they can use to "challenge where they think there's been a breach of their rights", but they also conceded that "we hear from campaigners all the time, we know our rights but they're not any use to us". They felt that to produce real change there needed to be collective mobilisation around rights with vocal opposition; whereas on an individual basis it becomes too easy to be ignored by those in power. However this contrasted with the MRN interviewee's (2) comment that SARs, to their mind, had been an effective tool for individuals campaigning about immigration issues as well as for affected migrants. This interviewee also suggested that alongside more awareness of data related issues there needs to be more solidarity with citizens standing up for other people's data rights

"regardless of the fact it's not affecting them."

Broadening the awareness of and engagement with data rights was articulated as a current need. Speaking about Bits of Freedom's data rights tool, this interviewee felt a lack of awareness of the GDPR and how to use these data rights was a particular challenge for less privileged citizens:

> The first step is making people aware that they have these rights and how they can use it. I reckon knowing what's in the GDPR and being able to exercise those rights is now limited to a kind of privileged part of society.

MRN interviewee 1 thought that "the resources you need to do [a subject access request] are not yet super widespread" and that as more of these resources emerge it is likely that civil society groups will act on behalf of - in this case - migrants rather than individuals claiming these rights themselves. Further, there were several comments that claiming data rights is currently not yet widespread practice and more could be done to engage citizens in the GDPR. MRN interviewee 2 felt that engaging people in data rights was a challenge because it's hard to make data protection accessible without "scaremongering" or it "being dry." The Digirights interviewee talked about the challenge of making digirights.com appealing because it's hard "to get people interested" in data protection. They also stressed the importance of putting everything into layman's terms, supplying templates and avoiding "lawyer jargon". Similarly, the Bits of Freedom interviewee said My Data Done Right could be improved by making it easier for citizens who don't necessarily have the legal knowledge. They felt that currently "you have to be quite privileged. You have to understand laws - well I think then you filter out already quite a big part of the population."

Tensions between collective and individual

Some interviewees found approaches that address individuals more than collectives to be problematic. This was the case, for example, for the American Civil Liberties Union (ACLU) interviewee speaking about Oakland's surveillance ordinance as well as for PPR on the subject of using rights to challenge datafication. The ACLU interviewee felt that the ordinance enabled individual residents to weigh in but did not allow for communities to 'deliberate together':

> In a way it's very individualised to the individual residents, who would be weighing in, can all weigh in as individuals, so it's not like there's some model built into the system in which they actually deliberate together and learn from one another. So I think that's another way which as an entity, residents in some jurisdictions don't really have a lot of collective power they only have individual power. (ACLU)

The PPR interviewee thought that individual rights do not deliver substantial change unless people 'mobilise collectively to assert their rights fairly loudly.' Further, they said that remedies do occur on an individual basis but not at a systemic level, because government departments hope that these individuals will stop campaigning if they settle with them on an individual basis; and to change this 'it takes a lot more collective organising and campaigning.'

> I think just being aware of your rights and politely reminding those in power

in terms of their duty that these are the rights you seem to have and could you remedy that, that just does not work. So the only thing we've seen work is people mobilising collectively to assert their rights fairly loudly. (PPR)

People do get remedies maybe on an individual basis, one by one, and with the hope that maybe those people will then move away from campaigning and sometimes people do. So people can get a remedy on it on an individual basis where the Department will settle with them as such but the more structured systemic issue still continues. So to get change on that, it takes a lot more collective organising and campaigning. (PPR)

Gaps in impact assessments for data driven technology

Many interviewees pointed to gaps in how impact assessments are currently carried out, articulating a range of problems and possible solutions. There was a consensus that the current framework is not robust enough. For instance the MedConfidential interviewee observed that a lot of data controllers are merely "paying lip service" to the impact assessment process, which they felt marked little difference from the previous Privacy Impact Assessments. This interviewee also saw an issue in not having repeated impact assessments that reflect new changes in data processing and data systems, saying that an assessment needs to 'be a living document' that is 'consistently revisited', but they were the only interviewee to suggest this.
Others said impact assessments could be improved by being conducted through an independent body instead of data controllers carrying out their own assessments. MRN interviewees explained that the current framework has permitted government departments to engage in covert data sharing arrangements under the hostile environment policy, negatively impacting migrant communities. Interviewee 2 suggested if an independent impact assessment were in place 'some of these arrangements wouldn't even be passed onto anyone, they wouldn't be implemented at all', particularly if equality impact assessments could be built into the framework.

For the Algorithm Watch interviewee, independent oversight is the most effective way to guarantee transparency, though they noted that this would not be enough to empower affected groups 'to actually react or deal with the results and decisions they are facing.' The Defend Digital Me interviewee also thought that impact assessments need to be independently conducted because data controllers are currently given too much free reign to shape an assessment to suit them, 'to tailor the impact assessment to what they want it to say and miss out all of the risks' while regulators like the ICO lack the authority to resist and will 'side with the data controller' as opposed to civil society. This was seen as 'disempowering' by this interviewee for civil society groups.

Stronger redress processes also emerged as a mechanism for improving impact assessments. The Defend Digital Me interviewee suggested 'impact assessments should be published and put in the public domain and there needs to be a review and basically a process of redress for those that don't seem to good enough.' Similarly, Doteveryone was "championing the redress space" in order to make online services more accountable, and explored what

the main barriers are for citizens trying to access redress. Doteveryone's Yes To Redress campaign came out of public engagement work they carried out, which this interviewee said showed public appetite for greater accountability from tech companies. The Bits Of Freedom interviewee also thought that redress mechanisms need to be strengthened, suggesting that building feedback mechanisms into auditing processes are important so that it is 'clear how people can instantly react when something goes wrong and where they can do this.'

Gaps where regulators could be more proactive

Several interviewees said they wanted to engage more with Data Protection Authorities (DPAs) and that civil society can help regulators with enforcing data protection law. The Digirights interviewee suggested that "civil society needs to give DPAs a hand because usually they have more work than they can manage with the resources they're given", adding that DPAs could find a way via civil society groups to "crowdsource" or be given citizens' results from data access and portability requests in order to regulate more effectively. Others, such as Defend Digital Me, have found their interactions with DPAs to be limited; for instance the ICO registered a complaint from Defend Digital Me but then 'did nothing' about it. Similarly, Medconfidential lodged a complaint about delayed codes of practices from the ICO permitting data controllers to continue selling pseudo-anonymised health data, but the ICO "just dropped the ball." Further, in some cases civil society has been able to highlight the inaction of regulators. In Germany the Open Schufa campaign launched by Algorithm Watch prompted the DPA in Hesse to take action against the Schufa company while also exposing that data protection in the Hesse region "wasn't really working", and this interviewee said that this was an unexpected result of the campaign.

Representation of affected communities

Connected to the strategies of engaging frontline workers and community organising, some interviewees felt that civil society needs to better represent those communities directly affected by datafication, particularly by seeking to understand their lived experiences. For example, the CPAG interviewee explained that "we don't have loads of contacts directly with claimants but what we do have is lots of contacts with welfare rights workers and people who work on the frontline". Contact with welfare rights workers and other practitioners in the social security system, who are able to recount the experiences of welfare recipients, is therefore important for CPAG because it provides evidence of how changes to social security are impacting those using these services, such as the digitisation of Universal Credit:

> We collect case studies and they primarily come to us through welfare rights workers, but they also come through other practitioners too, where, if people see problems with the Social Security system, they can submit case studies on those problems and then we have this bank of case studies which allows us to see what some of the systemic issues are. That's been helpful in the sense of feeling like our campaigns work is grounded in actual experiences and that we can evidence that. (CPAG)

Other interviewees, such as MRN, ACLU and PPR, discussed the importance of seeking direct contact with affected citizens in their local communities, either by physically visiting them themselves or by gathering stories and case studies through activist networks in order to better understand the impact of datafication on these communities, strengthening their evidence base for campaign work and representation of the issues. For PPR this is achieved by supporting local activists to put forward their own campaigns and "gather the evidence", but their community organising is also informed by physically having conversations with people who are directly impacted by being present at local service centres, as described below:

> The way it's come into the work is through people themselves who are directly affected by these issues. So benefit claimants and social security claimants who are involved in the Right to Work campaign for human rights protections within the Social Security system, and an increasing sense over the last four to five years among benefit claimants – the campaigners go out and regularly survey outside Social Security offices and assessment centres – and just increasing levels of anxiety and suspicion and fear among benefit claimants. (PPR)

Similarly, MRN aims to work alongside affected migrant communities and actively include their voices in campaign work so that these communities are not just passive sources of information:

> So we do participatory action research, so we try and work within or use communities also to gather information and work with us on the issues. So we work alongside them on campaigns, on issues, not just for information, not just churning it out as a paper but seeing how we can [make this] something that we advocate and challenge or campaign. (MRN 2)

For the ACLU, understanding the impact on particular communities enables the organisation to determine what kind of training, resources and knowledge might be needed for empowering those communities to have a say in decision making. For example the interviewee said that rather than "talking in theoreticals about the disproportionate impact of these systems" a more useful strategy has been to build relationships with communities "in order to get them to feel comfortable exercising the power of their story with powerful people who make decisions about their lives and lawmakers".

For the ACLU and PPR interviewees, there was also a sense of the importance of place because these organisations seek to anchor their work to local communities and interviewees stressed the need "go to where people are at" in order to better understand problems and provide support, but also to ensure their work has legitimacy and is representative.The ACLU interviewee stressed the importance of working at a "micro-level, neighbourhood by neighbourhood" while the PPR interviewee emphasised working with activists "at a grassroots level", going to "where the problem is manifesting itself and where people are feeling it":

> So for Social Security, they go to the Social Security offices. If it was health, they would go up to the GP practice. Asylum seekers, go to where asylum seekers maybe have to attend once a week in terms of reporting in. So it's kind of going to almost where people are at. (PPR)

Opportunities

Several opportunities emerged from our interviews that represent avenues for more fruitful civil society intervention and engagement.

Procurement as a point of civil society intervention

The public procurement of data centric technologies emerged as a potential point of civil society intervention. Several interviewees saw procurement as an avenue for strengthening the accountability of such systems, and highlighted that there is a wider need to improve the procurement process in relation to this. In the first instance procurement was seen as unnecessarily burdening the public sector. For example the AI Now interviewee said that impact assessments during the procurement stage could place an obligation on private technology vendors to consider impact before a particular data system is purchased by 'getting a lot more information from the vendor to assess what will be the impact on the community as a whole that the system will be making decisions about different marginalised groups, how that may impact them differently.' To this end AI Now has developed a procurement toolkit that proposes 'changes to contract language' and 'model requests for information' in order to unburden local councils and to place more requirements on the private sector.

There was also concern around the lack of public knowledge and public input into procurement processes, bringing up the idea that any information obtained from the private sector during the procurement stages should be made public. For instance the AI Now interviewee also highlighted that changes to procurement practices could be leveraged to insert public scrutiny into the procurement of data enabled technology, by mandating that impact assessments are published and 'made open for public comment'. This, they suggested, "gives the government a position to ask the vendor to redesign things, to address the community concerns", acknowledging that "I don't think just people within a government agency are going to be able to fully assess the impact and concerns".

The Defend Digital Me interviewee also felt there is a lack of public knowledge stemming from opacity in procurement processes, saying "we have a really big gap in understanding where a particular company is supplying a particular system which has reach into the lives of millions of people." Similarly to the AI Now interviewee, they suggested that risk assessments need to be improved to capture the potential for further harm beyond a specific use or purpose:

> There is, I think, a huge gap in the procurement process and in risk assessment that does not flag the potential significance of data collection by a particular supplier in the public sector because the risk assessment is only focused in that one instance. (Defend Digital Me)

This interviewee therefore thought that "we need a recognised system of consistent recording, [a] consistent register of use", suggesting a register requirement on national procurement so that all public sector data systems are accounted for, not just those that are the most expensive, and this register could be made public so that civil society can better scrutinise the procurement of data driven technology.

However, in terms of leveraging procurement practices to advance public participation, the

Doteveryone interviewee felt that although hypothetically this could be feasible, in reality the 'legalistic language' of procurement might act as a barrier to meaningful public engagement and this would need to be addressed:

> Yes, I'm sure hypothetically you could set up one of those [citizen] panels that could approve or query procurement decisions. The difficulty does come with the kind of technical difficulties in a lot of the procurement decisions, and also the kind of often long and legalistic language that is required and the kind of bureaucratic boxes that you have to tick for procurement. So it's not the easiest topic for the public to engage in but I think in principle if you could give people the right training and also package the information in a way that's actually relevant to them, then that could work. (Doteveryone)

Building alliances between different civil society groups

Several interviewees said that collaborations with other civil society groups have been integral to successful campaigns, but that this is done in a pragmatic manner depending on what the context, topic and need is, and tended to take the form of ad hoc rather than formal alliances. For instance the interviewee from PPR said that very little of their collaborations are "formalised" as they are "very much dictated by what the issues are and where the campaigners want to go with an issue". They described how campaigners have "built alliances with a whole range across the community and voluntary sector but also within the trade union movement".

Some mentioned that having access to other networks outside of their own sector is helpful for resisting uses of data driven technologies that affect multiple groups and converge multiple issues. For example, successful campaigns such as Against Borders For Children and Defend Digital Me's school census boycott, and MRN's campaign to end hostile environment data sharing were both able to form advantageous alliances that helped to raise awareness and reach wider audiences, as explained here by the Defend Digital Me and Migrants' Rights Network interviewees:

> ...in this particular case, I think the strategy was to reach out really to any sector of society that might be sympathetic. So, because it touched on health, this was already a big network to tap into and because it touched on data protection and individual rights, that was also another network to tap into. (MRN)

> So a group got together Against Borders for Children who were made up of teachers, parents and existing anti-racism and migrants rights organisations, and their umbrella group already had a wide network and reach into the education sector and the public who campaign on those issues, and they boycotted the collection of nationality very effectively. (Defend Digital Me)

Further, several interviewees discussed the need for more of these kinds of collective alliances between digital rights groups and groups from other sectors, especially those that advocate on behalf of particular communities, pointing to a

gap in collaborations. One interviewee put this down to a "disconnect between data issues and social justice issues" which they thought pointed to a need to practise "data intersectionality" (Liberty). The CPAG interviewee expressed a desire to work with groups like Medconfidential and Open Rights Group but was concerned that "they have different views to us". Speaking about a past lack of collaboration between digital rights groups and migrant groups, the MRN interviewee 1 said that digital rights do not adequately "embody" targeted communities, while MRN interviewee 2 said that privacy rights networks and refugee networks need to collaborate more than they currently do. The MRN interviewee 1 further explained that "there isn't much of a collaboration between digital rights groups and migrant groups." Having said that, this interviewee also suggested that "those connections are starting to be done", highlighting that Liberty "has always been a connecting organisation for the [migration] sector, so we worked a lot with Liberty", and that they were "heartened" to see that the 3million organisation (that represents EU migrants) partnered with Open Rights Group.

In addition, several interviewees talked about how issues are sometimes siloed when they need to be connected. There was a comment from the first MRN interviewee that the crossover between migrants' rights and data rights was a challenge to explain to

> A little bit difficult to explain to each side, so you have to explain the data rights side, yes this counts as data rights even though it's quite old systems and there's nothing automated or algorithmic about it, and to the migrant rights activists that, yes this is part of a much bigger shift and you should think about how people's data is used and shared. (MRN 1)

representatives from these sectors, in that respective groups sometimes struggle to make the connection or see the relevance. For example they said it has been:

A few interviewees also pointed to a lack of shared understandings or 'visions' as a further challenge for building strategic partnerships, as well as needing alliances that reach across datafied society rather than being siloed as stand-alone issues. For instance the Defend Digital Me interviewee said "we don't necessarily come from a similar understanding of what is the single issue that we need to address. So there's a lack of mission [...] shared across groups". The MRN interviewee 2 said they would like to better understand the needs of data rights organisations, explaining that "there are migrants' and refugee networks, they're different to privacy rights networks, and [we need] more collaborative use of these networks".

Lessons learnt and good practices

This section of the report will end by outlining some of the key lessons learned and examples of good practices that emerged from our interviews.

Process Matters

Interviewees from AI Now and PPR both indicated that the processes behind participation or engagement initiatives need to be well thought out, and in some

cases better implemented. The AI Now interviewee said the New York City (NYC) Task Force on automated decision making had a disorganised, "poorly run process" that did not take important factors such as the time and locations of meetings into consideration, meaning that some residents were excluded from the process because they 'couldn't physically make it to the meetings'. She also said that Task Force members had been frustrated by a lack of meeting notes resulting in repetition in subsequent meetings:

> So one of the major complaints I've heard is that a lot of taskforce members are frustrated with the meetings because for months, it felt like they were getting nowhere and they would start meetings and not even have notes from the last one, so it felt like they were just having the same meeting five times. (AI Now)

Similarly, referring to a co-production initiative involving mental health campaigners, the PPR interviewee said that not being given meeting minutes as quickly as Government officials and having no input into agendas and further to travel meant "everything was geared around people who were working in the system." They were critical of processes that do not give participants meaningful access to information and decision-making power:

> If we're talking about co-production, things like not being given the minutes where people working for the Trust would have the minutes in good time and nothing given, and not having any input into the agenda, just the location of the meetings, the time of the meetings. Everything was geared around people who were working in the system but the people who were coming in from outside who had a lot less power, they were the ones that were expected to travel the furthest in every regard, and just lack of access to information or any real decision making. (PPR)

Providing guidance and resources

Our interviews highlighted that civil society groups are producing a range of toolkits, frameworks and pedagogical resources in order to provide guidance to both affected communities and local authorities. Interviewees saw this as a way of equipping particular groups to autonomously engage in issues and act on them, sometimes instead of relying on their organisation to make things happen. For example, MRN created a "know your rights" pack for migrants that explained the issues stemming from the government's hostile environment and which aimed at rights awareness. The MRN interviewee 2 said the objective was to ensure migrants were "equipped with the knowledge that they can challenge [the hostile environment] themselves so they don't have to depend on an organisation." The MedConfidential interviewee talked about creating MedConfidential's opt-out form, which was a printable PDF that citizens could fill in and take to their local GP surgery. They said this was a very popular resource and worked well because it "provided people with the information they need to make their decision."

Further, the AI Now interviewee said more "robust materials" are needed, especially literacy resources, so that a variety of audiences and sectors can engage in these

issues and gave the example of explainers and briefs that can assist officers carrying out public record requests on algorithmic systems. They brought up AI Now's toolkit for public records requests in relation to data systems, saying it helps to "demystify technical terms" and also offers practical guidance for how to go about doing a request. In addition, toolkits from ACLU and Doteveryone were cited as a way of guiding local governments through participation and decision making. These interviewees both indicated that providing this kind of practical guidance was useful in the context of data driven technology, and the ACLU interviewee also said that ACLU's toolkit gave communities a means to voice their concerns and was a way of providing help to as many jurisdictions as possible with limited resources as an organisation:

> I think also local governments are under-resourced and so giving them a framework to be able to connect to communities and ask for input and get the information they need to get as council members who are going to vote on something, is also really important. (ACLU)

Tangible participation

Some interviewees talked about the need for citizens to "feel" and "see" participation and for a process to deliver tangible, transformative change. For example the Algorithm Watch interviewee spoke positively about the Open Schufa campaign giving citizens the opportunity to "participate actively and to feel this experience", suggesting that civil society organisations can offer trust and information to facilitate this. Also, the PPR interviewee said that communities have responded very positively to PPR's work because they see and feel that the organisation is working towards concrete change and taking direct action rather than "talking shops":

> We're not talking at the level of policy, language or words, it's very much about concrete changes. […] So people respond because we make a real change to them and their lives and they're the ones who are going to feel it and see it. So I think the local communities respond positively because they know it's about people taking action as well, it's not just about talking shops. (PPR)

Civil society wins

No particular strategy stood out in our interviews as especially conducive to civil society successes. However, interviewees were able to articulate in some cases what a 'win' looks like or how they were successful in advocating for a specific policy change or pursuing a particular strategy. For example, for Defend Digital Me, the school census boycott worked - in terms of getting the government to end data sharing between the Department for Education and the Home Office for immigration enforcement purposes - on one level because it weakened the government's position as it was left with such poor quality data that sharing it became futile, on account of the fact that

25% of schools did not submit a data return for their census. This made it harder for the government to "justify carrying on with [data" collection".

Further, the ACLU and MRN interviewees both talked of the difficulty in taking "'radical" policy positions, though for these organisations this paid off because each successfully opposed a policy. For instance, MRN helped to overturn the data sharing arrangement between the Home Office and the NHS, and in the US, ACLU successfully helped to bring about a ban on facial recognition technology in San Francisco. For MRN, our interviewee said their organisation was "pretty unique in its direct challenge to hostile environment discrimination, saying it's not acceptable that you ask people for their immigration status to rent a flat", adding that being "radical" at the policy level gave it credibility. They felt that although most migration NGOs would agree with that position, "they wouldn't necessarily campaign on it". However, at the same time, they suggested this was an "easier" win because MRN was able to campaign on the denial of health services to migrants which "was quicker in a sense to win because really it's quite a visceral thing to say you're letting people go without."

The ACLU interviewee similarly said that although the ACLU successfully got a facial recognition ban in place in San Francisco, the decision to call for a ban was carefully made and not without risk. They indicated that ACLU takes a pragmatic approach and with regard to government uses of Amazon's facial recognition software, Rekognition, they ultimately decided to call for a ban because the technology itself "was inherently fraught and racist." But with police uses of surveillance technology the interviewee explained that to call for a ban did not "feel like a remotely viable option." In contrast to what the MRN interviewee 1 said, they explained that even though the ACLU might oppose a technology there's a worry that "we might delegitimise any other argument" by being "too unreasonable." They further highlighted that by calling for an ordinance to question the impact of technology, to some civil society organisations this legitimises that technology and this is something ACLU "weigh[s] up all the time."

05 Alternative Imaginaries and Infrastructures

Literature Review

The importance of social imaginaries

Research on social imaginaries has flourished in recent years: from the 'capitalist imaginary' to the 'democratic imaginary', from 'ecological imaginaries' to 'data imaginaries', this area of inquiry has expanded considerably across multiple fields. Cornelius Castoriadis has situated the social imaginary at the centre of his theoretical reflections about the power of social imagination and its political implications (Castoriadis 1997). In his view, to capture what institutes and holds societies together, it is key to understand its institutions. He conceptualises these institutions as symbolic systems that require social imaginaries to function: the social imaginary refers to the capacity of a given society to create new meanings within which it is able to think itself. According to this perspective, modernity is a dual institution that comprises the central social imaginary of autonomy and the infinite pursuit of rational mastery. These social imaginaries underpin on the one hand the institutions and the interwoven social practices of democracy, while on the other hand, they sustain those of bureaucracy and capitalism. The imaginary can be fuelled by the horizon of capitalist domination, or fed by an autonomous perspective that can contribute to unleash new horizons and alternative significations. Benedict Anderson (1991) has also engaged with imaginaries in his famous definition of a nation as "an imagined political community". Drawing on Anderson, Charles Taylor (2004) has casted the social imaginary as an epistemological and ontological framework of cultural value and identity that is at once flexible, and yet firmly embedded in daily perceptions and social practices rather than ideologies per se.

Imaginaries are inextricably related to practice and action. They are ideas and understandings about the social world, but they constitute at the same time a "constructed landscape of collective aspirations that serves as a staging ground for action" (Appadurai 1996, p. 31). They operate as forms of power-knowledge, enabling and constraining specific social actions providing "a map of the social as moral space that is delineated along existential, normative and utopian dimensions" (Herman 2010, p. 190). Hence, social imaginaries are not just a set of ideas about the social world, but constitute pragmatic templates for social practice.

Reflecting on the power of social imaginaries is key because it allows us to understand the act of imagining as creative and not as merely reproductive or imitative action. In addition, social imaginaries emphasise the proper social, political and collective aspect of the imagination, instead of reducing it merely to a faculty of the individual mind. This allows us to move beyond the abstract notion of imaginaries and instead grasp imaginaries as concrete social processes that are shaped by specific groups and different social actors (Strauss 2006). Because social imaginaries are collective creations that stress imagination as a creative activity, this concept offers valuable means by which social movements and civil society organisations that work towards social change can be studied, also providing an open horizon for the development of a critique of existing social practices. Social imaginaries underlie notions of socio-political critique precisely because the possibility to change social worlds hinges on the fact that social worlds can be criticised, problematised and put into question (Adams et al. 2015, pp. 42-43). Therefore the exploration of social imaginaries is key to understanding activism. In fact, the ability to imagine alternative social

worlds and futures lies at the very centre of the everyday political action of protest movements and grassroots organisations. Haiven and Khasnabish (2014) have put forward the notion of "radical imagination", intended both as the ability to "imagine the world, life and social institutions not as they are but as they might otherwise be" (pp. 10) and as the capacity to bring "those possible futures 'back' to work on the present, to inspire action and new forms of solidarity today" (pp. 11, emphasis in the original). In line with Castoriadis, Haiven and Khasnabish (2014) approach the radical imagination as a collective process, something that groups do together, and accordingly conceptualise social movements as "convocations of the radical imagination". As they point out, movements are "convened by individuals who share some understanding of the world in a radical sense – that is, in the sense that they see the problems they confront as deeply rooted in societal institutions and, importantly, believe these institutions can and should be changed" (pp. 15).

Technologies, imaginaries, movements

There is a profound connection between social imaginaries and technologies. Thanks to their ability to emphasise the recursive patterns of media development, media historians have illustrated how recurrent social imaginaries have defined the whole history of media and communication technologies. Social scientists have undertaken several investigations into the social imaginary of communication technologies, including Marvin (1988), Mattelart (1995), Marcus (1995), Gitelman (2006), Mansell (2012), Jasanoff (2015) among others. Scholars have turned to the study of sociotechnical imaginaries and the imaginaries of media as a way to gain insights into the past, present, and future of communication technologies, investigating how they operate as sites for the realisation of multiple potentialities and of various yet contingent formations of power relations. As various authors have shown, the imaginaries that sustain the creation and development of media technologies - like the Internet and the social and cultural processes developed around it (Mosco 2004) - are far from being evanescent realities. They instead have material, social and cultural consequences, and they shape the realities and the futures of a diverse array of social actors.

The understanding of social movements as convocations of the radical imagination introduced above is crucial in relation to media technologies. It allows us to cast activists as active agents that imagine together alternative media appropriations and technological experimentations as ongoing enactments of their social and political engagement. This aspect is key if we are to research how different types of communication technologies are infused by specific social imaginaries, and how activists are capable of continuously imagining innovative uses and new ways of leveraging new technologies to pursue social justice and political transformation. Protest movements and civil society organisations represent privileged environments for the development and spread of subaltern social imaginaries. In activist spaces different ways of thinking about democracy, equality and justice emerge while radical ways of using technology are continuously envisioned and enacted.

The history of social movements and activist collectives can be viewed as a long trajectory of experimentation with communication technologies (Treré and Kaun, 2021) accompanied by the incessant creation of related social imaginaries with "media

functioning as the site of struggle over meaning" (Neumayer 2020: p.2). Media like photography, radio and television enabled activists to communicate their grievances in new ways; for example the Indian independence movement and the US Civil Rights movement both "leveraged media to build support and advance movement goals" (Caren et al, 2020: p.2). The communication and media infrastructures available to social movements were "relatively consistent and stable" between the 1960s and 1990s (Dolata 2017: p.13) and characterised by a cyber-autonomist ethos that favoured autonomous platforms (Gerbaudo, 2017) like Indymedia. More recent social movements like Occupy Wall Street, the Arab Spring, the Spanish 15M movement and Black Lives Matter have instead 'conquered' social media - especially Twitter, Facebook and YouTube - displaying a more pragmatic approach to maximise their visibility, while exposing themselves to the many dangers of corporate control and state surveillance (Owen 2017).

Research on social imaginaries, digital platforms and activist formations have yielded insights into how movements' technological appropriations are always shaped by different imaginaries (Barassi, 2015; Barassi & Treré, 2012; Barranquero and Barbas, 2022; Fotopoulou, 2017; Lim, 2018; Treré, 2019; Sádaba Rodríguez 2019; Treré et al., 2017), as well as technological myths and the digital sublime (Miller et al. 2021; Treré, 2018, 2019). These scholars have examined "the discourses, meanings, beliefs, visions, understandings, and assumptions of activists in order to properly grasp what they do with media technologies" (Stephansen and Treré, 2019: pp. 14). For some authors, drilling down into social imaginaries and the media appropriations of social movements is key to critically engaging with the overly optimistic narrations of technological progress pushed by the corporate world, as well as governments and institutions (Barassi, 2015; Fotopoulou, 2017). These studies shed light in the ways specific imaginaries and myths can have contrasting consequences: they can conceal authoritarian practices or fuel social and political transformation (Treré, 2019) The case of the 15M movement in Spain is particularly illustrative. The technopolitical imaginary of this social movement (Sádaba Rodríguez, 2019; Treré, 2019; Treré et al. 2017) fuelled technological experimentation and served as inspiration for new, radical democratic models based on openness, horizontality and decentralisation (pp.141-142 and p.152). Spanish activists framed technology as a democratising device (Sádaba Rodríguez, 2019: p.315). Sádaba proposes a cultural view of media imaginaries, arguing that cultural and symbolic factors incline certain movements to adopt more or less technophilic or technophobic strategies, thereby conditioning the results of their action repertoires (ibid). The Spanish scholar relies on the notion of "technological frameworks" as a means of understanding how imaginaries mediate between technology and ideological thinking, and which act as a social or cultural outline that incline activists towards particular appropriations of technology (p.316).

Data, imaginaries, futures

In our present scenario, "some of the most forceful sociotechnical imaginaries concern those about digital technologies and big data" (Ruppert, 2018: pp. 14). We are currently experiencing a new phase of social movements' technological experimentation and consequent creation of social imaginaries that is concerned with how activists appropriate data and algorithms to advance social justice aims as well as how the algorithms of digital platforms have "material impacts on the diffusion of protest and the dynamics of politics and social movements" (Treré, 2019: p.172). A new wave of scholarship has started to reflect on how data and algorithms are being integrated into the repertoire of protest of contemporary social movements and grassroots organisations. Maly (2018, 2019) has introduced the notion of "'algorithmic activism" to explore the rise of a Flemish far-right activist movement. The scholar sheds light on how 'algorithmic activists' from this movement strategically leverage the affordances of social media to reach their goals, 'boost their popularity rankings' and make their content go viral (Maly 2019, p. 1). Similarly, management scholars Kellogg, Valentine and Christin have used the term 'algoactivism' to address the individual and collective tactics of workers resisting algorithmic control (2020). Within the computer science literature, 'hashtag hijacking' has been recognised as a practice where hashtags are used to spread unrelated content, spam, or negative sentiments to tarnish the intended motive of a hashtag, thus making its presence counterproductive (Jain et al. 2015: 17). Scholars from political science have addressed the use of algorithms on Twitter to build networks of dissent and introduce alternative narratives of gender and race through the notion of 'hashtag activism' (Jackson, Bailey and Foucault Welles 2020). Scholars working at the intersection between social movement and media studies have stressed the ways in which activists and algorithms are mutually entangled. Galis & Neumayer (2016), in their study of digital protest in Greece and Sweden, have coined the concept of 'cyber-material détournement', indicating the alliances between activists and non-human actors that define social media activism. Treré (2018, 2019) has introduced the term "algorithmic resistance" to characterise the tactics of appropriation of social media algorithms by social movements to pursue their socio-political aims and foster their visibility. Velkova & Kaun have underlined "the significance of mundane user encounters with algorithms through which users can develop tactics of resistance through alternative uses" (2019, p. 3). They have focused on forms of explicit algorithmic resistance forging the concept of 'media repair practices'. Other authors have illustrated the problematic consequences of algorithms on the practices of civil society actors. For example, Etter and Albu (2020) have shown how social media algorithms influence activists' actualization of collective affordances, building on an ethnographic study of two organisations based in Tunisia. The scholars display that algorithms can have negative implications for collective action, since they introduce constraints for organising processes like information overload, opacity, and disinformation of which activists are often unaware. This echoes other studies that pointed out that Arab Spring activists were subject to higher levels of online surveillance and political repression by their authoritarian governments (e.g. Caren et al, 2020: p.7), while the sophisticated algorithmic strategies of the Mexican state were able to undermine dissenting Mexican university students in the #YoSoy132 movement (Treré, 2019: p.189).

Within the field of critical data studies, Milan has introduced the concept of 'data activism', casting it as the "new frontier of media activism" that appropriates information and technological innovation for political

purposes (2017: p.2), and engages with the modes of production of data in order to confront dominant understandings of datafication (2018). Data activism, Milan argues, is similar to media activism in the 1990s in that it provides space for citizens' democratic agency, uncovers stories of injustice and emerges from the fringes of society (2017: p.2). The scholar distinguishes between reactive data activism which resists threats to civil rights arising from surveillance, and proactive data activism that makes use of big data for advocacy and campaigning purposes while simultaneously appropriating data to bring about social change (ibid: p.6). But the fact that data and algorithms are mobilised for social justice constitutes only one aspect of the ongoing struggle around the datafication of society, since the engagement with data to enhance social justice often does little to challenge the premise of datafication (Hintz, Wahl-Jorgensen and Dencik 2019).

Recent social movements and activist formations display that social actors are able to resist, subvert, and repurpose the power of data and algorithms to envision alternative social imaginaries. A number of alternative and competing social imaginaries have emerged in relation to datafication. The data imaginary is part of the broader social imaginaries of our society. As Beer explains, "the data imaginary can be understood to be part of how people imagine data and its existence, as well as how it is imagined to fit with norms, expectations, social processes, transformations and ordering" (Beer 2019: p. 18). The scholar focuses on how commercial agendas envision data through the rhetoric of the data analytics industry, illustrating how the data imaginary is used to reduce the resistances and blockages to the expansion of data(fication) in different settings. He writes: "the way that data and analytics are imagined shape their incorporation and appropriation into practices and organisational structures - what I call here data frontiers" (Beer 2019: 19, original emphasis).

Other studies have excavated the creation of data imaginaries by both institutional actors and civil society organisations. These accounts illustrate "how dominant imaginaries of datafication are reconfigured and responded to by groups of people dealing directly with their harms and risks" (Kazansky & Milan, 2021: 363). For example, in his detailed study of the MyData movement, Lehtiniemi identifies both a market imaginary and a citizen imaginary among the movement's activists (Lehtiniemi, 2020: p.21). The scholar found that the market imaginary foregrounds human agency as individual market choice, where personal data serves the interests of individuals, while the citizen imaginary views data agency as civic agency and sees market governance as insufficient for resolving asymmetries within the data economy (ibid: p.83). In a different study, Lehtiniemi and Rucktenstein bring these two imaginaries together, drawing from four years of participant observation of MyData activities and demonstrating that "by uncovering the aims and contestations around data activism, socio-critical imaginaries can aid in promoting progressive 'public good agendas', offering support for navigating policy-crafting, technology companies' proprietary software, and data platforms that have become participants in deciding what counts in people's lives" (2019: p.10). Baack has demonstrated how the forms of activism enabled by datafication depend not just on the material properties of particular data technologies, but on the perceptions of those who design and use them (Baack, 2018: p.45). By exploring the afforded imaginaries held by civic technologists at mySociety around structured data, he shows that the organisation's epistemic culture and vision of creating a more participatory society directly informed how mySociety workers used data, for example deep linking in documents was used to create a "monitoring tool" for the public and to advance participation (ibid:

p.52 and p.49). For Gray, imaginaries can be used to reconfigure data politics. The scholar advances the concept of "data worlds" as a way of looking beyond dominant narratives about data politics, such as the privacy and surveillance vision or the liberation of data as a resource, in order to explore alternative possibilities (2018: p.1). Gray argues that conceiving data worlds as "horizons of intelligibility" enables us to focus on the epistemic world-making affordances of data infrastructures and question whether these infrastructures might provide the conditions of possibility for different ways of seeing, saying and knowing collective life (ibid: p.12).

From these explorations into different data imaginaries, it becomes clear that "it is through relations between people and technologies that imaginaries of desired and possible futures are performed" (Ruppert, 2018: 13). Terms like "data frontiers" (Beer, 2019), "data worlds" (Gray, 2018) and "data futures" (Ruppert, 2018) emphasise the capacity of citizens to perform and imagine data differently to reorient datafication in ways that unfold new horizons of significations. Dominant data imaginaries can be challenged by social movements and civil society organisations through the constant reimagining of what data can and should do, through the enactment of subaltern data imaginaries that rethink dynamics of participation, deliberation, engagement, emancipation and accountability with data and algorithms. These radical collective data imaginaries are the fuel from which more just datafied societies can emerge and thrive.

Interview Analysis

Data For The People

A prominent way in which datafication is being reimagined is through the argument for data to be rethought of as a public good that belongs to the people, entailing the creation of new, collective governance models, and an alternative set of concepts and values to steer that governance. Prioritising the "common good" is central to these arguments and interviewees from CLES, We Own It, MyData and Barcelona City Council all thought of data as a public good or utility that should serve the common good in contrast to the dominance of corporate interests; for example the Barcelona City Council interviewee thought of data as "belonging to the whole, to the society because it's produced by the society."

The idea of data for the people has prompted an exploration of commons-based data governance models for the city of Barcelona through the EU Decode project, focusing on "how we can build those rules and the conditions to work with it". In Barcelona the data commons model has its roots in the free software tradition and is conceived as a sociotechnical system that is likened to "socialising a new form of wealth", enabling governing communities to form organically through the process of governing data collectively:

> [It] includes the data, a dataset or more, and then you have a community, and then you have a set of frameworks and a set of practices that imply putting data in common, having a common normative framework around the infrastructure, the community and the data. Then deciding in common around those issues and then making a common use of that, and then also [...] generating things that reproduce and reinforce that kind of commons and that goes in the free software tradition. (Internet Interdisciplinary Institute [IN3], B)

This interviewee further explained that "the whole vision that [data commons] has is the creation of these communities of people that control the data'" which are equipped "to do things with the data and to actually govern the data and to actually get more benefit from it." In this way, the value of data commons models is not only that they encourage the development of more democratic, accountable data infrastructures but also active citizenship and community-oriented data practices and culture:

> It's not necessarily so much in the technology but in the kind of practice that we are trying to promote and in that sense, the governance implies the constitution of the communities that will govern it, so the construction of the subjects and not only the infrastructures that may allow it. (IN3 B)

Moreover, because the community has direct control over the data they decide governance rules and are able to intervene if data harm occurs:

> So if you have a community that has the data, so you set up some kind of

> actor that takes care of that, that's one thing. That actor is accountable to the whole of the community. Also the community is shaping their rules of the use of the data, so that's another way of mitigating harm in the sense that, if something has happened, people can react to that. You have people who are specified especially to taking care of it, but also the community as a whole can intervene in how these people are doing and also can shape the rules or reshape the rules as a result of a given harm. (IN3 B)

For the second Barcelona interviewee, the concept of the commons extends beyond the governance of data and becomes "a principle, a model around which to try to reorganise society" and for this reason commons-based data governance is seen as aligning with and advancing "the broader project of democratising politics and democratising society."

Another way in which the imaginary of data for the people is enacted is through the participation platform Decidim, which is offered as an alternative data infrastructure to corporate platforms that belongs to the people of Barcelona because citizens control the infrastructure while the strict policy of data minimisation ensures their data is not exploited for profit:

> We thought that the connection on different layers of the technological systems between Decidim and Decode could address some of those problems in terms of citizen control over data, also data minimisation which is a Decidim policy by default, also the control over the platform, over the technological infrastructure, that is also very key, the fact that Decidim is not owned by a corporation. (IN3 B)

By placing digital infrastructure under public control as open-source "democratic software" that citizens can shape and intervene in, Decidim has further established the idea of data for the people in Barcelona and "is a different model also for how we understand public service". Further, this has fostered "a new social contract" for digital infrastructure in the city that obliges public institutions to "defend the common good" which is based on protecting the data of citizens. Together, Decidim and Decode are seen as implementing an alternative imaginary to the realpolitik or "datapolitik" of data capitalism and data driven decision making.

> Decidim basically is this platform for participatory democracy which is a free software and we have also tried to build a community around it and that is what I call an attempt at moving from free software to democratic software, in the sense that more people rather than just hackers can intervene in the shaping of the project and the future of the code. (IN3 A)

> And we are creating a new kind of social contract to add to the digital infrastructures, trying to provide these rights, trying to provide these agreements between the citizens and the institutions that we, as a public institution, in defending the common good are defending you in terms of data in a moment that everyone is instructing you the value of all your data that you are producing in the digital era. It is the first thing and one of the most important thing, what's happening with the data of citizens. (Barcelona City Council interviewee)

> We talk of Decidim as a political network rather than as a social network [...] This combination of Decidim and Decode is primarily thought against what we like to call data politic which we understand as the realpolitik of 21st

century, the fact that concrete social actors use massive amounts of data in order to shape social conversation and, more concretely, political decision making. (IN3 B)

However this interviewee also noted that the decision-making power of citizens is limited because the citizen initiatives proposed through Decidim are then 'launched to the rest of the citizenry in a top-down process because the City Council takes command on that'. Further, the Citizens Debt Audit Platform interviewee, who was a consultant for the Ramblas redevelopment citizen initiative, was critical of this aspect, arguing that in reality it is a case of 'you vote and then they decide', highlighting how well-meaning participation can be hijacked by decision-makers:

This process is a participatory process where people propose things and then you vote for those things and then someone decides which of the proposals actually go ahead. This someone is the Government, it's not absolutely based on the number of votes. The number of votes sort of informs that decision but it's not decisive. The proposal that got more votes was ignored, for example, which was a big infrastructure project. (Citizens Debt Audit Platform)

Further, the Barcelona City Council interviewee highlighted that despite the intention to put control over data in the hands of the people, the City Council can sometimes act as an obstacle by seeking to collect citizen data in order to pursue its own agenda, compromising the principles of commons and sovereignty:

We are not collecting any kind of other personal information but when we are working on participation, the city council is trying to ask our department all the time the statistics of who is participating, the gender of the people, the age of the people, where they are living [...] this is why we are worried because if any government starts to use Decidim and decides to control the citizens, they could do it and we are trying to push the technology to avoid this kind of behaviour. (Barcelona City Council)

Elsewhere, the CLES and We Own It interviewees had similar aims to the Barcelona interviewees and also touched on commons-based approaches in their visions of data as a public good, which was embedded in new municipalism ideas of public service delivery. For the CLES interviewee there was a strong emphasis on ownership, as private sector data monopolies were seen as a threat to economic justice and the aim of democratising the economy, necessitating commons-based ownership models for digital platforms and data. In particular they thought that democratically owned platforms should act as intermediaries that own data on behalf of the people, but which are subject to citizen-driven governance:

I suppose that we need to find democratically owned platforms which own the data in commons for people and that its decision of how it's used is decided democratically through the people. [The] whole industry needs to be democratised and given greater accountability from the people. (CLES)

We believe that in regarding the

democratising of the economy and creating greater levels of economic justice in the economy, that data and our data is, in effect, the commons and so, in that sense, it is our data. Yes, it's our data and its use when it's collectivised needs to be owned by all of us in perpetuity and in that, the private sector should have nothing to do with our data. (CLES)

For the We Own It interviewee data as a public good provided a slightly different opportunity "to solve collective problems" because data can be a useful resource for societies to utilise and benefit from:

I think data is a public good, it can be used to solve collective problems. It's a real problem if that data is owned and controlled by private companies and we don't have a say over it both in terms of personal privacy and also in terms of the kind of opportunities lost of what we could do with that data to get better results for society as a whole. (We Own It)

Our collective data is a useful resource that can be used in different ways and we probably do need some kind of real collective ownership over it, and to make sure that it's being used in ways that people feel happy with and that are for the most benefit of society and the environment and so on, to solve our collective problems.

This was similar to comments made by the MyData interviewee A, who explained that some MyData activists view data commons not just as a governance framework but as a mechanism for achieving wider social advantages, again because data can be used as a public resource:

"There are some ideas about data commons in which people would use their own data and put that into a data commons resource, and then that could be used somehow for the benefit of all the people whose data is included or even for the benefit of society in general or a common good". (MyData A)

Accountable Algorithms

Others suggested datafied societies can be made more equal if algorithms are made more accountable and reoriented to carry out different goals that "correct" historical bias and inequity. For example the <A+> Alliance interviewee argued that data driven technology needs to be reappropriated "to correct for historic inequity and bias" with less focus on harm mitigation and more focus on "correction" which means "harnessing the potential of the technology to actually correct and change things." Underpinning much of their work is the concept of "affirmative action for algorithms" whereby women and girls are more included in not only the funding, auditing, consultation and implementation processes surrounding public service delivery but actual algorithm accountability processes too. In particular, this interviewee argued that algorithms can should be reoriented towards fairer resource allocation, particularly with regards to women and girls in the Global South:

> It's a question of using algorithms, revisiting assumptions and correcting for historic inequity and bias in the provision of services. So this includes, or goes beyond, who codes, who designs, who funds, who consults, who implements, who audits, and it goes to the people who are not in the process, the women and girls not in that process, to the people who are receiving services, whether that's education, whether that's infrastructure development. There are lots of services that are not social protection benefits. Do you need a road? That's also a classic thing, do you need another airport in Africa, or do you need a way for market ladies to get safely back and forth from their village?
>
> The point of affirmative action for algorithms is that the algorithms themselves would correct for historic inequity. […] It's correcting for historic inequity in the system as you're relooking at allocation.

In addition, they suggested that as public services become datafied it provides public administrators with the opportunity to rethink how services are provided and resources allocated, as well as to make them more effective and ultimately more just by deprioritising efficiency. This enables societies to use and leverage algorithms as tools for social change:

> What we're seeing with automated decision-making is that people are just digitising their analogue equations […] so nobody is really rethinking what those allocations are and why. Therefore what is the greatest challenge and the greatest opportunity is the challenge is to get public administration to understand that this is the moment to be able to re-examine, whether they embrace the old algorithm or they create a new algorithm, about what it is that they're trying to achieve in order to be most effective, as opposed to deciding this is a more efficient way of going. (<A+> Alliance)
>
> What most of these systems have been designed for is to catch fraud, and that's great, we want to catch fraud, of course, but if that's the centre operating principle of a system you've created, then it's going to wind up operating in a punitive way. It's not necessarily going to be more effective in delivering better quality of life, or better services, so it's like this maximising efficiency principle

> that I don't think harnesses the power, the potential, of the automated decision-making, so that's a part. (<A+> Alliance)

Procurement by the Public for the Public

Several interviewees highlighted that public procurement can be (and is currently being) rethought as a tool with which to achieve wider social transformation, including making datafied public service delivery more inclusive and accountable. For example for the CLES interviewee procurement represents an opportunity for public institutions to consider not only the direct benefit that they'll get from procuring a good or service but also "the wider social, cultural and environmental consequences of that purchasing and the services and goods they ask for." In addition, the <A+> Alliance interviewee felt that changes to procurement and innovation processes can be leveraged to "change tech companies" with regard to gender bias and exclusion within the technology industry, suggesting that innovation potential for women-owned companies could be written into procurement processes, and that "you could give points for having women on the design team, you could give points for having women all through the process."

Further, in the UK calls for changes to public procurement from We Own It, CLES and Preston City Council have provided a vehicle for public ownership debates. In particular these interviewees foregrounded problematic outsourcing practices in the public sector and suggest that outsourcing needs to be made more accountable or halted altogether, often by implementing public ownership models. For instance, for CLES opposing outsourcing provides the opportunity to invert current procurement processes by encouraging "community businesses, cooperatives or municipal ownership." Similarly, We Own It used to campaign for changes to public procurement but now argues that "all council services need to be in-sourced":

> We need all public services to be run in public ownership and then through that, we need mechanisms to hold them accountable. So instead of pretending that there can be a useful or viable market, when actually you often only have a handful of bidders who are big multinational companies, we need to acknowledge these public services are effectively monopoly services a lot of the time. It doesn't make sense to have this kind of fake competition. (We Own It)

For both the CLES and Preston Council interviewees, procurement implemented as a core tenet of Community Wealth Building has the potential to strengthen democratic public ownership of local economies:

> There's an issue about the ownership of the economy and making sure that that ownership leads to more equality, more outcomes that benefit people. So if I give you the idea of democratising the economy through procurement, we get democracy in there because ourselves and the public sector are saying you've got to pay a living wage in many cases,

you've got to have apprenticeships, you've got to have environmental benefits, you've got to support the local supply chains. We're even looking at the procurement side to actually support these worker owned businesses that have been locally rooted within Preston. (Preston City Council)

In relation to public services, our work ensures that in the delivery of public services they are delivered by either the public sector directly or through some forms of democratic or plural ownership, so it should be delivered in-house. And we also believe that goods that the public sector need, they should also seek to advance community wealth building in the purchasing, to ensure the delivery of public services has virtue running right the way through it. (Centre for Local Economic Strategies)

Others also thought public procurement in relation to data driven technology should have more public input and engagement to ensure a public service or programme meets the needs of the communities they are designed to serve, including the question of whether it is needed at all:

[Civic participation] should be written into the pre-procurement stage, because you should figure out whether you actually need it before you build it. So nobody is even asking, do you need it? […] So it's absolutely a tool that should be used and it's probably the most important thing that we could be doing, to make sure that we start to include people and new voices and new innovations. (<A+> Alliance interviewee)

I would really change the procurement process…The procurement process is very much top down […] I would make it more bottom up and at every stage expose suggestions to people and see what they want to use and then follow them there. […] Not just see what they use but ask them every time, like how could this be more useful? So we have money to spend, you are using this, how could it be more useful to you? (MyData 2)

Institutionalising civic decision-making

In the fourth imaginary, several interviewees suggested that new citizen bodies could be established that institutionalise participation and citizen representation in decision-making processes relating to local data policies and public service delivery. In Barcelona, interviewees discussed plans to "build a citizen network that could have political impact" that would be a deliberative body and intermediary between the City Council and Barcelona residents. This body would provide a bottom-up and, it is hoped, critical perspective on Barcelona data policies, as explained by the IN3 interviewee:

We hope that that network will be relevant actually in the city, that could be an interlocutor for the City Council, especially for the Barcelona data office. That has been a goal from the beginning and I think right now we are kind of close to getting that citizen social organisation group that could in the mid-term be a valid interlocutor, and also an activist promoting a critical view on data even from the grassroots. (IN3 B)

The We Own It interviewee discussed a proposal for a citizen body, called Participate, that holds public services accountable by democratically electing citizens and training them to represent the public in specific public service sectors. This body would be a mechanism for "more public control and accountability" while also serving to advance public understanding '"of what's going on and how they can get involved and hold their council or hold their Government to account." The interviewee described this body as a cooperative that institutionalises citizen voices:

> So we're saying there should be an organisation that is the voice of the public service users and it is a democratically accountable body. So it's a bit like a co-op, anybody can vote for their representatives in different sectors or stand as a representative, and those people get trained up to be the voice for the public in those services. So instead of it just being a conversation between Government and potentially unions and workers through their unions, we have a kind of broader voice for the public in those conversations and in those governance structures as well. (We Own It)

Beyond representing citizen voices in the context of public services, Participate was seen as enabling participation by strengthening transparency and feedback mechanisms, in particular by opening up public service meetings to the public and providing "shop fronts on high streets where people can ask questions and give feedback." This was slightly different to the participatory potential of the citizen networks in Barcelona, which, by "interacting with the City Council' are able to 'intervene in decision making by the data office about data governance."

The CLES interviewee also saw participatory opportunity in citizen "entities" created under projects inspired by New Municipalism, which was described as "double devolution" because power is devolved to the local state "but then it devolves some delivery and management to citizens and citizens" organisations like co-ops and so on." The advantage of this was framed differently to the Barcelona and We Own It interviewees, which was the advantage of "citizens owning the means of production in terms of delivery of public services."

However, the Preston City Council interviewee suggested that though institutionalising participation processes like these is appealing it is ultimately challenging for resource-poor local authorities, adding "I'd love to have these [citizen] assemblies like they have in Brazil but we need a change in Government in that." They saw government cuts as an obstacle to implementing participation, viewing it as nice-to-have rather than necessary, though they suggested cooperatives and worker-owned businesses can promote "economic participation":

> The problem we have is we don't have a huge amount of money to spend. All forms of local government are cutting back on services because Government's cutting back. So there's not really the budget there to actually participate the community in really as it's been cut back that much, especially in Preston because we're quite a small council, comparatively. But what we are doing is by establishing new economic structures, whether it's the community bank, so it's a regional cooperative bank that we're leading on, or establishing worker owned businesses, we're getting the participation that way. So it's more of an economic participation in the alternatives we're trying to promote.

Power Structures

In a similar way to the A+ Alliance interviewee, the Data For Black Lives interviewee also spoke about reappropriating and reclaiming technology, or more specifically "working to make data a tool for social change instead of a weapon of political oppression", but this is to be achieved by reclaiming not only data infrastructures but the power structures that enable datafied racial inequality. Within this process of reclaiming a key concept for Data For Black Lives is therefore "big data abolition", which is a template for simultaneously creating new data infrastructures while dismantling the power structures that uphold the status quo:

> Abolition isn't just about destroying, it's about creating something new, and it's also about understanding that, just like in the movement to abolish prisons, that prisons aren't the solutions to society's problems. And also, most importantly, that part of abolition is also, just like with the call to abolish big data, to dismantle the structures that concentrate power and wealth and resources into the hands of a few (Data For Black Lives).

Central to enacting this vision is movement building and the interviewee was critical of applying "technical solutions to deeper historical problems that require a lot more work than, let's say, rewriting an algorithm." At the same time, data in the hands of directly impacted black communities is an important collective image that provides a basis for reimagining society:

> For us, it's about leaning into the black radical tradition of organising, and of imagining new worlds, and of really this kind of critical analysis, but it's also about the idea that truly, with big data, even with some of these tools that are currently being weaponised, that if reclaimed into the hands of people who are most directly impacted, into the hands of those most vulnerable, we do have infinite possibilities for how we can reimagine society and for what we can do. (Data For Black Lives).

It was also highlighted that data activism is crucial to the dismantling of big data power structures, defined as "data in the hands of people as data as protest". Part of this is creating and providing impacted communities with digital tools "where folks can actually go online and see where and how many data tools or surveillance technologies are being used in their community", which would also provide tools for resisting datafied oppression.

> Specific advocacy and organising tactics and strategies that they can use to engage not just decision-makers but also to spread awareness in their communities around these tools, have community conversations, as well as, most importantly, model resolutions and affirmative policies. (Data For Black Lives).

Further, during the Covid-19 pandemic Data For Black Lives has been leveraging open data portals to reclaim and reappropriate data to advance racial justice, particularly to highlight the disproportionate impact of Covid-19 on black communities, by collecting and reporting on race data. The result has been to empower the movement to "influence not only just the Covid data collection policies but also the recovery and resilience policies, as it pertains to black communities." This was was framed by the

interviewee as a positive experience that helped to galvanise data activism on the ground, enabling movement members to become more involved:

> So the first thing we did, I did manually, was to go through every single open data portal in the US, enter it on a spreadsheet, and our first thing was tracking which states were reporting and which were not. […] Our research director led a team of some software engineers, some volunteers, some folks from our network, to build this code base that is literally a dataset, built through Python, that automatically scrapes every single site to give us specifically in real time the number of Covid deaths and the number of Covid cases for black communities. […] It's been incredible to see how folks in our hubs, and in our network, have been able to use this real time data to advocate on the local level as well. (Data For Black Lives).

Individual empowerment or collective control

The question of how datafication can be reimagined produced a tension in some of the interviews between collective control and individual empowerment, particularly among MyData and Barcelona interviewees. In the case of Barcelona, the Digital City vision is informed by the concept of data commons as well as the concept of technological sovereignty, which both overlap with each other but the latter often foregrounds individual control over data and digital infrastructures. During interview discussions the individual and the collective were both highlighted as important, yet sometimes it was unclear who ultimately is the subject of data sovereignty: individuals or collectives. For instance the interviewee involved in Barcelona's Decode project explained that this "empowers individuals and, especially from our viewpoint, collectives to decide on data" and "for the project in general, data sovereignty is a key notion and so is data commons." Similar comments were also made regarding Decidim, whereby technological sovereignty applies to the platform infrastructure as well as data, as expanded in the below comments from both interviewees:

> Primarily it's about, on the one hand, at an individual level by giving you more control over your data in relation to Decidim. And second, the Decode pilot we tried to make it oriented to get some kind of network that then could interact with the City Council with regard to data governance, and not exactly through the technology. (IN3 B)
>
> One of the main motivations to use Decidim is, first of all, the question of free software and this notion of technological sovereignty because they control their own digital infrastructure. (Barcelona City Council)

Alongside technological sovereignty, technological autonomy was said to be another core principle that promotes political agency by envisaging autonomous citizens producing their own technology and shaping Barcelona city politics in relation to data:

> One of our main principles here in Barcelona is not only the principles of

> technological sovereignty, but mainly technological autonomy because we want to promote citizens to be empowered to produce their own technology but also to have citizens controlling which kind of politics in terms of data the city council is creating and is doing. (Barcelona City Council)

The dual emphasis on individual and collective agency is also evident in Barcelona's data policies where there is a separation between the private "personal" data of individual users and public data that is "produced by the city". Both interviewees explained that minimising the amount of personal data collected while maximising the the collective benefit gained from open data forms a core pillar of technopolitics in the city:

> The first level [of technopolitics] is what's happening with the data – how this data is stored, how this data is managed, who has the right to look into this data? And this is why, from the perspective of, first of all, the software, trying to guarantee the maximum access to the public information but on the other side, trying to be maximum restrictive in terms of protecting the users' personal data. [...] We all the time work with two levels of data, the public data and the private.(Barcelona City Council)
>
> We try to combine all of these two aspects, public data, maximum openness and the private personal data, trying to reduce the amount of data that we are saving in our systems but also trying to protect and give to the users, to the citizens in this case, to the participants, the maximum confidence in the infrastructure because we don't use the personal data in any case. (Barcelona City Council interviewee)
>
> In order to minimise problems, we have as little personal data as we can and then to maximise potentiality, all that is public is open API and it is creative commons in order to make sure that it is accessible and also that it can be exploited. (IN3 B)

However, at times it was implied that collective aspects were ultimately more fundamental to the Digital City project. For example, the Barcelona City Council interviewee stressed that individual control, in their context, goes "beyond individualism" and "the idea of self-sovereign identities". For them, data commons is the "much more important" concept because "it also implies all the economic aspects, community aspects while data sovereignty is a limited concept." Further, the IN3 A said that Decidim "is primarily oriented to galvanise collective action, collective intelligence, collective will".

According to interviewees, the MyData movement is grappling with a similar tension between individual and collective agency. Although individual empowerment was said by interviewees to currently dominate the movement it competes with a civic-oriented, participatory imaginary that fosters collective dynamics, particularly regarding participation in decision-making about data. However translating this imaginary into concrete changes is seen as a challenge, as articulated by MyData A:

> More promising things I consider to be [...] things that don't take this kind of market agency of individuals as they think it should be actually, but

> instead think something in terms of drives towards the uses of data or tries to participate in decision making processes that have to do with data, but in a more collective sense, so some sort of citizen participation. And those I think are more promising but what they are really in a very practical sense, so that's far more difficult to think than what are really the practical ideas about this individual-centric, market-centric ideas about data control.

Interviewee 2 suggested that MyData can be a paradigm for collective control by fostering networks of communities or "hubs" across the world that discuss and collaborate together on data governance problems. They suggested this can be a "geographically distributed" source of collective intelligence for civil society such as NGOs, journalists and academics, whereby the MyData global community can foster bottom-up research and investigations regarding uses of data to better empower civil society:

> One thing we're doing now is to try to replicate that model of discussions at a local level, so we have this hub model where local hubs are basically holding meet ups to try to have all those diverse actors meet up locally and discuss those issues, and also a network of hubs. So the hubs would help each other, so recently we had a meet up of the Geneva hub where the Korean hub and the Austrian hub participated, for instance.
>
> Yet another way MyData can be useful is in working with civil society, so journalists, academics and trying to foster bottom up efforts that leverage the standing of civil society actors. So concretely that would mean crowdsourcing, for instance, with journalists or with academics, so either investigations or research.
>
> MyData offers very quickly a community of people who have strong common cognitive understanding of the problems and geographically distributed. So this is quite hard to get otherwise […] but I think that having the MyData community could really help for that because it would be easier to make sure that the people are really informed about what this is about and they would be more geographically distributed more quickly.
>
> (All MyData B).

Having said that, MyData members have predominantly focused on strengthening the market agency of individuals, envisaging autonomous consumers creating their own data infrastructures in order to harness innovation as a "counter power". The objective, it was said, is to provide alternative digital services and thereby disrupt monopoly power structures in the data economy. Again, though, the individual and the collective are both part of this vision as described by the MyData B:

> MyData is trying to promote a positive vision around personal data. A vision of individual empowerment, collective control over this data through open ecosystems, so ecosystems that give more agency to individuals to come up with alternative solutions. So we foresee a future where, from a technical standpoint, the systems we're using are much more open which enables more innovation in that space, so with innovation thought as a counter power for the dynamics we currently

> see. So the dynamics of centralisation, accumulation of data which translates into centralisation and accumulation of power. (MyData B)

Further, while the concept of technological sovereignty is based on the idea of data as a public good and aims to strengthen political agency among Barcelona citizens, within the MyData individual empowerment imaginary data is thought of as a "personal asset" that enables individual consumers to have market agency and choose alternative digital services that offer more control, while also rewarding the developers of those new services:

> In many ways, the primary thing is the idea that individuals should be in control of their data and this seems to lead really easily when it's combined with the idea that there needs to be some commercial benefits for the developers of services that can try to make this happen, it seems to lead really easily to ideas that people use their data as some sort of a personal asset. And they use that asset for their own benefit basically. (MyData A)

> In this idea about individual centric data control, there's kind of built in the idea that when the individual uses data for their own benefit, they choose the purposes for data use that bring them the most benefits. And then this also means, on the other side of the table, for the commercial actor that, if they can provide purposes for data use that people choose, then they will thrive in this market for different data uses. So it is seen as a kind of way to open up the data market. (MyData A)

In addition, while the baseline principle of individual control over data in Barcelona has generated alternative data governance models, within MyData individual control translates into a liberatarian view of limited governance in favour of individual autonomy, which was considered "problematic" by the MyData interviewee A:

> This is really obviously kind of centred on the individual sort of idea and centred on the individual capabilities to make rational decisions about their data. And then also the idea really easily excludes any restrictions or, in that sense, any kind of governance on the ways that data should be used. So as far as it's okay with the individuals, that's okay with the movement. So that I consider to be problematic.

06 Data Literacy

This chapter has been co-authored by Ina Sander, Cardiff University. Some of the research included in this chapter was conducted as part of Ina Sander's PhD research at the Data Justice Lab.

Literature Review

Situating critical data literacy

The concept of literacy has a long history and underwent a "gradual expansion" from its early understanding as the ability to read and write via a variety of concepts describing the skills to use and communicate through different media to today's critical digital or data literacy approaches that combine reflective user skills with a critical reflection of digital technologies (Pötzsch, 2019: p.235). However, the history of literacy cannot be understood without considering the social politics that have shaped its changing meaning over time (Pangrazio and Sefton-Green, 2020: p.210). For instance, Bhargava et al (2015) suggest that historically literacy has been used to entrench existing power relations, highlighting Claude Levi-Strauss' observation in 1955 that literacy campaigns around reading and writing during the Industrial Revolution were inseparable from 'the extension of military service and the systematisation of the proletariat' (p.6). Having said that, Pangrazio and Sefton-Green remind us that although literacy may have reinforced power structures it has also 'paradoxically' served to critique them, having been 'both central to the operation of neoliberal capitalism and to its critique so that the teaching of literacy is valued for its future economic potential as much as how it might produce civil society' (2020: p.217).

The critical orientation of literacy can be traced back to Paulo Freire's (1970) critical pedagogy framework that he developed in teaching literacy to Brazil's rural poor during the mid-20th century, where the goal of literacy education was to transform social and political inequalities (Pangrazio and Selwyn, 2019: p.165; Spiranec et al, 2019; Mihailidis, 2018: p.162). Freire's pedagogy comprises two 'complementary and indivisible' aspects: 'the technical ability of reading and writing, and the social emancipatory process of understanding and expressing oneself in the world' (Tygel and Kirsch, 2016: p.112 in Špiranec et al, 2019). The Freirian model of critical literacy thus places equal importance on skills and critical consciousness but there is also a broader political aim of overturning inequality. In terms of civic participation, it has been noted that the aim of Freire's critical consciousness is to foster intervention and democratic praxis (Mihailidis, 2018: p.162).

However, since then scholars of more recent forms of literacy relating to media, digital and data have highlighted an apparently unresolved tension between literacy as skills acquisition and literacy as critical reflexivity, described by Buckingham as 'a tension between a broadly social model of media literacy and what we might call a competency-based approach' (2007: p.46). For Buckingham, the latter is problematic because it 'puts forward a functional conception of literacy that rests on an assumption that information can simply be assessed in terms of its factual accuracy' (ibid: p.46). Exploring digital literacy models, Pangrazio (2016) also finds a tension between 'technical mastery' and 'critical mindsets', suggesting that if we accept that digital technology is part of a techno-social system,

then digital literacy has to encompass much more than a set of technical skills (p.165). At the same time, however, Pangrazio proposes that 'a critical disposition is not often equated with productive and successful behaviour in the digital context', drawing on Lovink and Rossiter's (2005) view that 'it takes effort to reflect on distrust as a productive principle' (Pangrazio, 2016: p.165). Yet for others a critical disposition is precisely what gives literacy its civic potential, for instance Mihailidids (ibid) suggests critical media literacy 'has become adept at articulating a set of skills and competencies, but less so the ways in which skill attainment translates into civic or social impact.'

A similar distinction between practical skills-based media or digital literacy concepts in contrast to concepts that aim for a critical reflexivity can be identified in existing data literacy research. The overwhelming majority of both scholarly and industry concepts define data literacy in terms of technical skills, for example: "being able to access, analyse, use, interpret, manipulate and argue with datasets in response to the ubiquity of (digital) data in different fields" (Gray et al., 2018: p.2). This traditional understanding of data literacy is also sometimes seen as a "recent addition to a growing band of literacies such as numerical literacy, statistical literacy and IT literacy" (Frank et al., 2016: p.5). Yet, besides this skills-based discourse of data literacy, a small but growing number of publications calls for critical approaches to data literacy, such as "data infrastructure literacy" (Gray et al, 2018), "critical data literacies" (Fotopoulou, 2020), an "extended definition of Big Data literacy" (D'Ignazio and Bhargava, 2015), "critical big data literacy" (Sander, 2020), "data citizenship" (Carmi et al, 2020), or "personal data literacies" (Pangrazio and Selwyn, 2019). Considering the variety of different terms used to describe such critical approaches to data literacy, the rest of the chapter will refer to these different understandings using the term 'data literacy'.

Apart from using different terminologies, many existing critical approaches to data literacy further understand the criticality of their concepts in different ways. For this reason, Pangrazio and Sefton-Green suggest that 'a distinction between operational and critical literacy [...] is not tenable for data literacy' (2020: p.214). In line with this, several of the critical concepts mentioned above place equal importance on skills acquisition and a socially-oriented critical reflexivity: for example D'Ignazio and Bhargava (2015) propose the adoption of elements of Freire's emancipatory pedagogy of Popular Education in a pedagogical path towards developing data literacy, which they envision as a set of capabilities that enables people to produce and use data in a critical way. D'Ignazio and Bhargava's framework involves both the advancement of technical skills and the transformative project that results from literacy (Fotopoulou, 2020: p.6). At the same time, there has been a recognition that data literacy has been narrowly defined with too much emphasis on technical requirements, therefore failing to challenge deeper structural issues (Bhargava et al, 2015: pp.4-5), and account for ideological contexts in which data are produced and given meaning (Philip et al, 2016: p.365). In Fotopoulou's view 'with a few exceptions, the emphasis of data literacy frameworks is disproportionately placed on technical literacy [...] and still disregards the need to address deeper structural issues of inequality' (2020: p.2).

Data literacy and participation

Several studies in the literature indicate that media and digital literacy programmes have been viewed as a means of advancing civic engagement, particularly in young people. For instance Rheingold (2008) outlines ways in which participatory pedagogies can be used by media literacy educators to activate young citizens' public voices via online platforms, as well as to build strong connections to civic and political issues about which they care (cited in Kahne et al, 2012: p.5). Taking Boyd's (2017) blog post 'Did media literacy backfire' as a starting point, Mihailidiis (2018) argues the need to re-imagine media literacies for civic intentionality, which would move media literacy initiatives away from the deconstruction and 'weariness' of information to focus on designing interventions that bring people together in support of solving social problems, reinventing spaces for meaningful engagement and creating positive dialogue in communities (p.159). Others such as Jenkins (2006) have argued that increased digital media literacy education has the potential 'to close the digital media participation gap among youths by providing the skills and opportunities that will enable active participation in the public sphere' (cited in Kahne et al, 2012: p.5). However, Pangrazio argues that Jenkins' idea of participation foregrounds its social and cultural aspects 'at the expense of any political aspects' (2016: p.167).

In practice, media and digital literacy programs have been shown to have a modest impact on levels of civic engagement. For example, Kahne et al (2012) explored whether young people's active engagement with digital media could be leveraged to encourage political participation through such platforms. They found that digital media literacy activity is positively associated with 'gains in the quantity of politically driven online activities and higher levels of online exposure to diverse perspectives' (ibid: p.19). These online activities were using the internet to obtain political information, using blogs and/or social networking sites to share and discuss political perspectives, and communicating with others working on social or political issues (ibid: p.8). In a different study, Martens and Hobbs (2015) explored the relationship between media knowledge, media analysis skills, academic level, and participation among students who took part in a school administered media literacy program at a large urban high school in California. They too found a 'statistically significant association' between media literacy and civic engagement among the students, leading them to assert that 'media literacy programs have potential to support the development of news analysis skills, build background knowledge of media institutions, audiences, messages and effects, and thus contribute in an important way to the development of meaningful civic engagement among adolescents' (ibid: p.133).

Data literacy is increasingly defined and understood as a precondition for participation, though what kind of participation is made possible by critical data literacy is not always clear, as some frameworks indicate that being literate in a datafied society means being able to critically engage with data driven technologies and make sense of them, while others add that literacy can also equip societies with critical understandings that enable challenges to and interventions in the power structures underpinning datafication. Within some frameworks agency is the pivotal concept, for example Pangrazio and Sefton-Green (2020) define data literacy as 'the set of skills required to have agency in a datafied world' (p.214). Likewise, Bhargava et al (2015) argue that data literacy is 'the desire and ability to constructively engage in society through and about data' and necessarily builds on sub-kinds of literacy such as media literacy, as it requires a combination of the technical,

critical, quantitative and conceptual skills on which they are based (pp.8-9). Bhargava et al (2015) further argue the objective of data literacy should be 'empowering citizens and communities as free agents' for which they propose four key pillars: data education, data visualisation, data modelling and participation (p.9). Similarly, Pangrazio and Selwyn's (2019) 'personal data literacies' is premised on a need to equip individuals with 'understanding, control and agency within the data assemblage' so that they might make informed decisions about their data practices (pp.426-427).

Others suggest data literacy can foster resistance to and scrutiny of the power dynamics that shape datafied processes. Viewing data literacy through the lens of mis/dis/mal-information, Carmi et al (2020) propose data citizenship as a new framework for literacy practices that prioritises proactive participation. In a different analysis (Carmi et al, 2020: p.5) they elaborate on this to argue that as algorithmic processing is accelerating inequalities there is an increased need for data literacy frameworks 'that move beyond the individual to networked literacies, that develop critical thinking about the online ecosystem and which empower people to become active citizens.' Ultimately they find that data literacy now means 'understanding and being able to challenge, object and protest contemporary power asymmetries manifested in datafied societies.' (ibid: p.5) Sander argues that critical data literacy gives citizens the means to question data infrastructures, since it necessitates not only an understanding of data collection, analytics, automation, and predictive systems but also citizen-driven scrutiny of the systemic and structural levels of such systems (2020: p.3).

Further, it is suggested that participation necessarily relies on data literacy because to be a politically engaged citizen in datafied society requires data activist practices that make use of and normalise data skills. Gutiérrez (2019) argues that data literacy is 'a condition of the possibility for participation in a datafied world' that can also impose a barrier to participation, finding that 'to rescue political participation in a datafied domain, a degree of skill is necessary.' Gutiérrez argues that data activism is enabled by data literacy because in order to 'enter the fray' and engage in direct action in a datafied world, activists make use of data skills, their access to data and data tools and the opportunity to explore and exploit data analysis (2019: paras 26 - 29). For example she highlights the appropriation and use of drones as a method to produce data and counter-maps that opposed governmental "land-grabbing" in Indonesia, and map-based data activism 'depends on technological savvy people participating and collaborating' (ibid: para.27). For Gutiérrez, what matters is not the level of technical expertise displayed by citizens but the degree to which such technical practices become ordinary and commonplace; by becoming part of the everyday 'set of of democratic skills' participation can be advanced (ibid) as 'the data infrastructure becomes an ordinary object in civic involvement.' (ibid: para.31).

On the other hand some suggest it is problematic to seek participatory outcomes from literacy. Pangrazio and Sefton-Green, for example, suggest that utilising data literacy as a civic engagement strategy 'builds on the assumption that knowledge and understanding encourage self-efficacy in citizens', and suggest data literacy should be one aspect amongst others in any strategy that aims at citizen empowerment (2020: p.217). Further, evidence from Martens and Hobbs' aforementioned study suggests that, 'however valuable the ability to analyse and evaluate an advertisement, it does not automatically translate into civic engagement or social action' (2015: p.135).

Critiques and limitations of data literacy

Data literacy in context

Literacy is not without limitations and has been criticised as 'counterproductive' and 'too basic' (Fotopoulou, 2020: p.5); as well as for oversimplifying the problems it seeks to address and for invoking solutionism (Mihailidis, 2018: p.157). A notable critique throughout the literature has been to point out that implementing data literacy rarely makes sense or remains useful outside of specific contexts, with research into the practice of data literacy highlighting that universalist approaches are problematic. For example, taking the premise that it is imperative to develop literacy frameworks that enable civil society actors to engage in datafication policy debates and use open data for advocacy, Fotopoulou proposes a framing of data literacies as agentic, contextual, critical, multiple, and inherently social, drawing from the results of her critical data literacies training instrument that was piloted in workshops with seven civil society organisations in the South East of England (2020: p.3). Fotopoulou contends that it is unhelpful to talk about a single form of data literacy, instead arguing that the development of plural literacies should be considered within the 'material social contexts of civic cultures' that they seek to inform and are informed by, allowing us to understand the multiplicity and interconnection of data literacy practices with other literacies, such as critical media literacy (ibid: p.3 and p.15).

Similarly, in their national survey of citizens' engagement with and understanding of digital platforms, the Me and My Big Data project found that context, culture and communities all shape citizens' data literacies and so argue that a one-size-fits-all approach has little social value (Carmi and Yates, 2020: p.5). For instance they see less value in universal literacy programs from UNESCO, Mozilla and the UK's DCMS that try to 'scale-up' by reaching as many citizens as possible (ibid). In addition, they highlight that the types of skills and capabilities deemed to represent literacy can hold ideological assumptions about the best or more important skills, and 'hence the type of citizen you want to have at the end' (ibid: p.12). Therefore, to fully appreciate that 'people with different backgrounds need different literacy programmes' Carmi et al advocate in-depth citizen workshops to better understand group needs, and the prioritisation of local community-based literacy programs that make sense to the everyday lives of diverse social groups, and which would benefit from investment in public spaces like libraries (Carmi et al, 2020: p.5 and p.11). Further, in their study of algorithmic knowledge Cotter and Reisdorf employ a similar rationale, underlining that social and cultural context form part of knowledge building, shaping a person's orientation toward information, and so the value of literacy for different communities depends on its capacity to address the realities of their everyday lives (2020: p.514).

Gaps in addressing collective responses and resistance

A significant limitation of data literacy and arguably literacy in general is that it has often manifested in individualised rather than collective forms. The literature indicates that individual autonomy has been a priority when it comes to conceptualising literacy (e.g. Cotter and Reisdorf, 2020: p.748). As Carmi et al (2020: p.12) and Mihailidis (2018: p.156) both point out, media and digital literacy prioritise individual responsibility

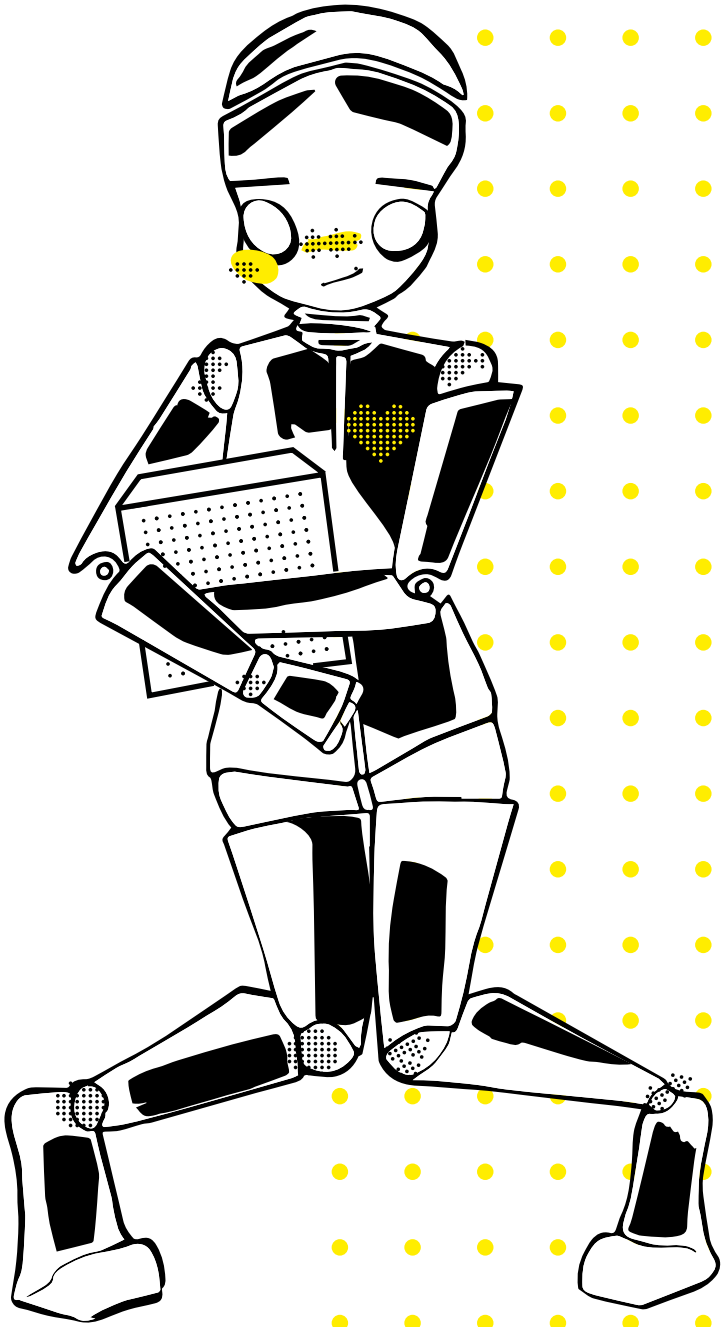
rather than questioning the role of the community, state, institutions or technology companies. Proponents of data literacy have recognised this shortfall, however, and highlight the need for data literacy initiatives to consider tensions between personal data-oriented individual literacies and the need to respond to information asymmetries as a collective (Pangrazio and Selwyn, 2019: p.431). Also the "seemingly 'neutrality'" of data literacy and its concepts of learners and competencies has been criticised as the "mere act of centring data in a literacy approach is political and value ridden" (Jansen, 2021: 1). According to this line of criticism, a "(re)politicisation of data literacy" is needed, which considers critical literacy and racial and social justice theories, and takes a "bottom-up approach to dismantling power structures, understanding inequality and promoting political participation" (ibid: p.1, 11).

Relatedly, there is a notable call in the more recent literature for data literacy programs that provide tools and tactics to individual citizens and collective contexts like labour unions, especially to enable resistance. For example, Carmi et al (2020: p.15) argue that literacies with a critical element need to address skills and thinking that can provide citizens with tools to shape, object to and protest their datafied realities. They found that in practice both policy and education programmes have not been developed around citizens' proactive skills to protest, object, unionise and conduct other collective actions against various civic issues (ibid: p.15). Likewise, Pangrazio and Sefton-Green have questioned the social utility of data literacy for confronting the challenges that datafication poses, casting doubt as to whether models that call for reflection on datafication can do more than simply raise critical awareness and understanding (2020: 218). Consequently they argue that to be effective data literacy models must set out practical strategies and tactics that individuals can experiment with 'in order to operationalise their newfound awareness and understanding' (ibid). They go on to suggest that data literacy might need to involve tactics of resistance to disrupt data flows and processing (ibid). These calls for data literacy to be reoriented towards active citizenship, protest and resistance perhaps speak to the criticism that there is currently a lack of practical models for operationalising data literacy (Pangrazio and Sefton-Green, 2020: p.210). Although much conceptual work has been done, concrete suggestions on how to implement such a transfer of academic knowledge are rare (Sander, 2020 p.3), which arguably justifies Fotopoulou's conclusion that, to be effective, data literacy initiatives should focus on 'participatory, real-life contexts of learning and doing' (2020: p.15).

Literacy and socio-economic status

Lastly, the literature shows there is a need to locate disadvantage and social inequality in literacy developments and a further critique of literacy problematises the historical correlation between knowledge distribution and socio-economic status. Cotter and Reisdorf, for instance, have proposed that 'patterns of algorithmic knowledge building reflect the long history of information inequities throughout human history, which correspond to socioeconomic advantage' (2020: p.746). Findings from their study of literacy practices in relation to platform algorithms suggest that more privileged groups are better positioned to benefit from algorithmic knowledge than those with fewer resources (ibid: p.758). Similarly Martens and Hobbs found in their study that 'smart, academically gifted teens tend to be more media literate than their less

academically talented peers' (2015: p.135). Moreover, Kahne et al show that studies indicate that digital media skills are unevenly distributed, with those from privileged backgrounds demonstrating higher levels of digital knowhow than their peers of lower socioeconomic status' (2012: p.4). This points to a potentially concerning limitation with data literacy initiatives that rest on the expansion of knowledge of data driven technologies.



Mapping Data Literacy Tools

Data literacy encounters serious challenges in concretising and making tangible the often abstract and obscure processes and practices of datafication. A key strategy is therefore the development of digital (and offline) tools that provide citizens with practical means to inquire and scrutinise data practices and to understand, shape, protest and object to their datafied realities.

To complement our research within the data literacy theme we have therefore mapped fourteen different literacy tools that contribute to critical data literacy, broadly defined as the ability to critically engage with datafication by reflecting on the societal implications of data processing and implementing this understanding in practice (Sander, 2020). Some of the tools in our sample also address current gaps or shortfalls that we have observed in approaches to data literacy such as contextual and participatory approaches to literacy, practical applications of critical thinking, learning about public sector uses of data and algorithms, and literacies that encourage collective dynamics.

Tool typology

We have identified six types of literacy tools in our sample, which we define in terms of how they educate or engage citizens in relation to data issues: through workshops, interactive learning, investigations, advancing participation through data, quick practical guides and longer in-depth guides. These definitions are overlapping, however, as some of the tools could be placed in more than one category.

Data literacy project	Creator(s)	Tool Type
Algorithmic Ecology	Stop LA Police Department Spying Coalition	Workshop resource
Algorithms Exposed	University of Amsterdam	Data participation via browser plug-in
Algorithm Tips	Northwestern University (USA)	Investigation tool
Automating NYC	Harvard University students	Interactive learning tool
Data Scores	Data Justice Lab	Investigation tool
Digital Defense Playbook	Our Data Bodies	Workshop resource
Do Not Track	Independent filmmaker	Interactive learning tool
Instagram Data Donation Project	Algorithm Watch	Data participation via browser plug-in
I Have Something To Hide	I Have Something To Hide	Privacy settings guide
Me and My Data Shadow	Tactical Tech	In-depth guide
Minimise Targeted Ads on Social Media	Privacy International	Privacy settings guide
PreCrime: Predictive Policing Simulator	Kloos & Co Medien	Interactive learning tool
UnBias Fairness Toolkit	Proboscis and Horizon Digital Economy Institute (Nottingham University)	Workshop resource
Your Data Your Rights	Digitale Gesellschaft	In-depth guide

Workshop resources

These types of literacy tools are created to facilitate workshops and are best suited for groups and communities because they encourage collective thinking about data. Our Data Bodies' Digital Defense Playbook helps affected communities (particularly People of Colour) to think about collective strategies of resistance to and protection from the surveillance state. The Unbias Fairness Toolkit and Youth Jury Resource Pack can be used to facilitate workshops and jury-style discussions on the topic of algorithmic bias and fairness. The Algorithmic Ecology from the Stop LA Police Department Spying Coalition is an analytical tool and framework for organising community resistance to algorithms.

Interactive learning tools

The three tools in this category educate citizens by visualising or simulating data driven systems to create an interactive experience. Automating NYC is an interactive website that uses real-world examples of algorithms to visually explain how they work and the real impact they have had on New York City residents. Do Not Track is a short interactive documentary series that uses the viewer's data to explain online tracking. Pre-Crime: Predictive Policing Simulator also uses real-world algorithms to simulate a gamified predictive policing experience in which the viewer is both the citizen being scored by "Agatha" the algorithm, and the data scientist trying to perfect the system to reduce crime.

Investigation tools

The Data Justice Lab's Data Scores Investigation Tool and Northwestern University's Algorithm Tips are both designed to help citizens, and especially researchers and journalists, to further investigate public sector uses of data systems in the UK and US respectively. They are both accessible databases with easy-to-use search functions.

Participatory tools from algorithmic accountability projects

Our sample includes two research projects that invite citizens to participate in holding platform algorithms to account. Algorithms Exposed and Algorithm Watch have both developed browser plug-ins that anyone can download and which work by 'donating' user data from Amazon, YouTube, Facebook and Instagram to the project teams. Algorithms Exposed is particularly useful for researchers and data scientists who are interested in understanding personalisation algorithms and the project's Github can be used to examine results from the project.

Quick guides for implementing stronger privacy

These are a set of technical steps that citizens can easily and quickly implement to optimise settings on their device(s) for stronger data privacy. I Have Something To Hide offers a "data protection toolkit" and Privacy International has produced a guide to minimising targeted advertising on nine different platforms. These tools are good for providing individuals with more privacy and control.

In-depth guides to data protection and the data economy

These are comprehensive guides which require more reading and provide thorough introductions to their given topic, but which also have a focus on the practical application of the learning they offer. Digitale Gesellschaft's Your Data Your Rights guides citizens through the fundamental GDPR rights using text and video, and provides template letters to send to data controllers to exercise these rights. Tactical Tech's Me and My Data Shadow is no longer being updated but still offers a comprehensive overview of what digital footprints are and how they can be used to discriminate, while also offering a number of practical ways to control data shadow "traces" and resources for educators like training session plans.

Interview Analysis

A starting point for interview discussions was how data literacy is currently defined and understood among practitioners. The majority of interviewees defined data literacy as being able to demonstrate a critical understanding of how data infrastructures work and their resulting consequences for individuals and society, although some interviewees' definitions focused much more on the former. However for other interviewees awareness of how data infrastructures work was important but insufficient and extended beyond awareness to being able to exercise agency, as well as understanding the politics and power dynamics of data. To a lesser extent, some interviewees centred technical skills in their understandings, but this was the least common interpretation among interviewees. One interviewee thought about data literacy in terms of the ability to use statistical methods and critique such methods at the same time, while another interpreted data literacy as the skill of being able to critically evaluate the epistemological status of data.

How literacy tools can advance public awareness and knowledge

Visualising datafication

Our interviews demonstrated two ways in which literacy tools are being used to advance public awareness of datafication. As pointed out in the literature review of this chapter, data literacy contains a specific pedagogical challenge in presenting often complex and abstract data processes in a tangible and accessible format. In this respect interviewees spoke about the opportunity in using tools to concretise data related processes and concepts in order to strengthen public understanding. One way in which this was achieved was by helping citizens to visualise abstract concepts like privacy and algorithmic bias, as well as the underlying physical infrastructure of the internet. For example both the Tactical Tech and UnBias interviewees said that drawing datafied environments during literacy sessions enabled citizens to better grasp the issues and helped to highlight gaps in public knowledge, while also suggesting that visualising concepts and processes help citizens to appreciate the materiality of datafication and its impact:

> We did a lot of mapping, so we used big sheets of paper [...] got them to map out their digital worlds and to draw the links between them so that they started to begin to understand why data, when they're on their phone and looking at stuff, was popping up in other places. [...] but it was particularly interesting to see young peoples' reactions to [...] how the actual internet operates and all the systems behind it and why is it when the ads pop up in different places that seemingly are completely unconnected.
> (UnBias 2)

> We asked them to draw the internet and then most people would draw like clouds and stars and things like this, without realising there's a huge physical infrastructure behind it
> (Me and My Shadow)

Relatedly, the Stop LA Police Department Spying Coalition (SLSC) interviewee said that their algorithmic ecology framework enabled community members to visualise the systems of power underpinning the LAPD's predictive policing programmes, ensuring that the Coalition's popular education work was accessible to all members:

> What [the algorithm ecology framework] did was organise the complete story that the Coalition already knew about PredPol, but organised it in a way that visually if you didn't want to sit there and listen, or if you needed a visual thing to carry with you while you were listening, or you couldn't hear and you could see, or even if you couldn't see and you could hear, you could create the image in your head of what we were trying to say. Because the algorithm was in the centre, but it was like all this stuff on top, all this stuff around it, was controlling the algorithm creating the impact. (SLSC)

Grounding technical processes in real impact

Tools have also advanced public knowledge by providing a way for abstract or complex technical processes to be grounded in examples of real world impact. For example the creator of Algorithm Tips said that 'finding examples that really are impactful for individuals to make a connection to their personal lives or [..] their social lives' is a helpful data literacy strategy that can advance wider public understanding. Further, the creator of Algorithms Exposed said that communicating the project's relevance was difficult because of the technical focus on algorithms and so they experimented with focusing on the personal issue behind the algorithm because this is 'closer to people's everyday lives.' Real world impact was also essential to SLSC's algorithmic ecology framework and tool, which was based on a practice of collaborative knowledge sharing and enabled the ecosystem surrounding LAPD predictive policing, especially the key actors and funders, to be 'power mapped'. Importantly for the Coalition members, however, this knowledge aimed to 'decentre the algorithm' and so was less concerned with technical understandings of how the LAPD's predictive policing algorithms worked because it was primarily grounded in the impact on LA and particularly Skid Row residents. Foregrounding impact in this way helped to engage a cross-section of the community:

> So it's not so much like I'm educating you but it's that space of collaborative knowledge sharing where the knowledge of the impact [...] and listening to people who were impacted that started to create the algorithmic ecology, it's grounded in impact. (SLSC)

Data literacy as a precondition for participation

According to several interviewees data literacy is useful, effective and even necessary for advancing civic participation because it fosters active citizenship and informed engagement with the issues at stake, and this was especially the case when data

literacy was understood as having a critical awareness of social and political-economic contexts rather than skills proficiency. Some interviewees indicated that data literacy is a precondition for participation in datafied societies; for example the UnBias Toolkit creators both viewed data literacy as a fundamental pillar of active citizenship, suggesting that we should be aiming for everyone to become data literate because 'it's vital, otherwise you're not a citizen' (Interviewee 2) and 'data literacy in a society which increasingly is using data driven approaches to shape itself is a core requirement for an engaged citizenship' (Interviewee 1). Interviewee 1 also suggested that without more critical awareness of how platforms use our data, negative outcomes will prevail because 'if the citizens don't have the knowledge, the data literacy, to be able to actually engage with these things in an informed way, we keep encountering these issues.' Interviewee 2 added that the UnBias Toolkit was premised on 'more than just critical thinking, it needed to also be about how do you give people an understanding of what it is to be part of a civic society' and emphasised that part of this 'civic intentionality' is 'how do we think collectively and not individually all the time'.

Other interviewees also suggested data literacy can trigger participation as it can encourage informed debate. For the Your Data Your Rights interviewee, knowledge of how data infrastructures such as social media platforms work is 'crucial' in order 'to be able to participate in democratic processes', while they also stressed that data literacy should go beyond engagement with or use of digital platforms by advancing understanding of 'the underlying issues.' Similarly, the two Automating NYC interviewees also drew a direct link between data literacy and participation in social life. For example Interviewee 1 said that data literacy was not about technical skills but about having 'enough grasp of the topic to engage in issues that matter to you'. For this interviewee data literacy can therefore help to advance citizen engagement with social issues because it enables citizens 'to continue to ask questions about those things but you don't feel completely shut out of the conversation.'

Having said that, some interviewees also critiqued the concept of data literacy itself and articulated limitations they saw with it. For instance interviewee 2 took a more critical view in reflecting on the politics of data literacy in relation to participation, observing that while data literacy tools 'can push the people who have excluded others from the conversation to really see what literacy is and to make conversations more accessible', data literacy in itself carries the 'expectation that people have to have a certain amount of language and knowledge to enter into the conversation.' This interviewee also questioned the gatekeeper roles that literacy can produce, asking 'who gives a stamp of approval that you are sufficiently literate to then self-actualise?'

In addition, other interviewees said more data literacy is needed in the context of the Covid-19 pandemic to advance informed debate and wider engagement with the issues at stake. The My Data Shadow interviewee suggested data literacy can produce a more nuanced discussion and help citizens to better understand the complexities surrounding the introduction of contact tracing apps in order to make informed choices:

> I think [data literacy] is super important [for participation] because what you see now in the discussions about certain AI or the Covid-19 tracing app is that the question is done so stupid. It's like do you want facial recognition? Yes or no. I don't know. Do you want a Covid-19 tracing app so you're allowed

> to go to bars? Yes. These are not yes or no questions, these are super difficult questions and there's so many shades of grey in there. [...] And I feel like investing in data literacy, this will allow people to participate because at least in what the different levels are to participate in, even if they then decide not to do it, that's then their choice but they at least know it's more complicated. (My Data Shadow)

The Pre-Crime interviewee also felt that the pandemic has heightened the need for data literacy, but this was due to the urgency of challenging datafied inequalities that, in their view, will persist unless citizens are more aware of these inequalities and able to reclaim their 'digital human rights':

> Covid showed that the system is flawed, that privilege will just... if we don't take action, privilege will always be there. So through these projects and through data literacy and digital literacy, people need to start to understand that this is now the reality. [...] And Apple and Google released their own [contact tracing app]. The collection of data and what the governments and the private companies will know about us will only increase. So the idea, of course, is to fight for our rights and to make the digital rights and the digital human rights, like the digital rights have to become human rights [...] At the end of the day it's all surveillance in that sense and if you're surveilled, you have to know why and agree to it and if you don't want to be surveilled, you should have the freedom to say no, without being a suspect. (Pre-Crime)

Data literacy must be tied to a specific context or goal in order to support intervention

In contrast to those who viewed literacy as a precondition for participation, other interviewees suggested that data literacy cannot foster intervention unless there is a specific need for accountability or justice. For example the Algorithm Watch interviewee felt that 'data literacy will only make a change if it is needed by the people who use it' and was sceptical of the potential for data literacy to advance participation without being anchored to a specific context:

> If you try to apply data literacy to contexts where it's absolutely not needed, it will fail. So in this case, I believe that some groups or representatives of these groups know very well, because they experience it, that there is a need for algorithmic accountability and that given the right resources, they will be able to apply data literacy appropriately.

Using the example of the LGBTQ+ newsletter and community Salty, this interviewee further argued that data literacy cannot advance civic participation unless a particular group deploys data literacy out of necessity or for a specific cause or injustice:

> As members of this [LGBTQ] minority, [Salty] were very much aware of all the problems that the Instagram algorithm and more generally the Instagram ecosystem cause. So let's

> say that there was or there is a reason for them to become data literate. Now, what's also interesting in what they did, so one project in particular that they did is they ran a survey of their audience in their own community to get a sense of how big the problems of Instagram's automated discriminations were. What's interesting is they had this necessity for data literacy.

Further, some interviewees thought that aiming literacy initiatives at the general public can be problematic for creating too broad an audience, for example the creator of Your Data Your Rights reflected that in hindsight aiming this tool at the wider German public may have been 'naive' and 'too broad':

> The intended audience was extremely broad and maybe way too broad, again with hindsight. The goal, as I said, was to reach citizens or consumers which is pretty much everyone in Germany and that reached from young people to old people, already somewhat data literate people to not so literate people, non-German speakers and German speakers – stuff like that. So that was tough and that was a limitation.
> (Your Data Your Rights)

Yet there was also a suggestion from one of the UnBias creators that it is possible to overcome the difficulty in reaching and engaging the wider public with one tool by making that tool malleable and adaptable:

> Is it possible to make a tool that effectively reaches out to citizens? Is citizens too broad of a category? I think that really depends on how you formulate, how you shape the tool. If you give it more of an open nature, then people can shape it to fit their own kind of situation and that's I think one of the strengths of our toolkit. (UnBias 1)

In addition, those interviewees with experience of implementing data literacy in a specific political context felt positively about its participatory potential. For example the Automating NYC and SLSC interviewees all spoke about the potential for data literacy to help create the conditions for political engagement and resistance, particularly by enabling community empowerment based on knowledge of political-economic issues. For SLSC, popular education became a movement and power building strategy that brought multiple groups together from across Los Angeles and promoted collaboration between those groups through 'knowledge sharing':

> I really think that the pop-ed, the community based involvement, the meetings, the building with the families, the collaborative coalition component of it, built bringing in multiple groups [...] So that cross-section and bringing in so many people as well not only shares the knowledge but builds power in their own space. So it's really kind of outing what is going on and making that accessible. (SLSC)

Moreover, developing a critical understanding of the impact of predictive policing among the community enabled the Coalition to build a 'culture of resistance' that all members participated in:

> I think that full engagement in the process of all the way from lawsuits, to community written reports, to the artwork that we're doing, to the

> meetings that we're having - having the community there - all of that is building the culture of resistance. Because people are coming in and not just saying, OK I need to know how this algorithm works and I'm going to calculate if it's really affecting people, and then I'm going to calculate how it can be fixed, or how it's flawed, but people come in and they tell their story. This is who I am, this is how I've been affected by the police, I'm finally in a space where my issues are being heard and being listened to and people are moving on them. (SLSC)

For the Automating NYC creators data literacy was seen as crucial to civic participation in the context of the Automated Decision Systems Task Force's public meetings, because 'there's this huge gap in literacy around what even are automated decision systems, what is the purpose of the taskforce, what is the real concern here, how do you even start asking questions?' (Automating NYC 1). They further highlighted that their tool was designed with civic participation in mind from the outset, and that 'part of it is specifically geared to New York City because we want our readers to then submit an idea or a question to the hearing.' The aim of Automating NYC was therefore not only to make residents aware of the public meetings but to provide them with the specific resources and connections to feel confident to participate in the meetings, ultimately giving residents 'political power with their knowledge' (Automating NYC 2).

Discussion

Discussion

This project has explored the opportunities and challenges for citizen participation in the governance of data and data-centric technologies by assessing the extent to which participation is enabled by institutional consultations, deliberative models, oversight mechanisms, civil society initiatives, alternative imaginaries and infrastructures, and data literacy frameworks. We have found that these six fora may constitute different puzzle pieces of an emerging mosaic of public involvement in relation to data-driven decision making. As our interviews and other research demonstrated, the different components offer promising avenues for enhancing the visibility of public concerns and incorporating them into policy debate and decision-making processes. However they largely constitute nascent practices, each with significant limitations, and remain far from a coherent and systematic democratisation of data governance.

In this final section, we will summarise key findings from the different sections of this report and close by returning to our broader question regarding the prospects of a multi-layered strategy towards civic participation in the datafied society.

Institutional dynamics

Regarding the practices and purposes of governmental and institutional decision-making about data and automated systems, our research suggests there are very few opportunities for citizens to intervene or have their influence felt. Firstly, our case study of Risk Based Verification (RBV) points to a widespread absence of citizen and civil society consultations carried out by UK Local Authorities regarding the implementation and use of this system, as well as a problematic consensus that it is not necessary for the public to be consulted on the use of this system. Given the proprietary nature of the algorithms underpinning RBV and the questions over its accuracy, as well as a lack of understanding among Council staff as to how risk categories are determined, what data is used and what impact this may be producing, it is disappointing and insufficient that the only way in which citizens would be able to engage in these issues is through their local councillor. Even then, this depends on the receptiveness of the councillor and presupposes citizen knowledge of RBV. However, the impact of austerity cuts to local authority budgets should not be underestimated, while the implementation of RBV derives from central government recommendations.

Secondly, our case study of Facial Recognition Technology (FRT) similarly highlights too few opportunities for citizens to be meaningfully involved in decisions about the implementation and deployment of this technology. Both South Wales Police (SWP) and the London Metropolitan Police Service (MPS) have made some effort to inform the public but these have fallen short. In the case of SWP, public outreach has not adequately enabled civil society to provide scrutiny and the force's use of a website and social media do not amount to substantive participation opportunities. There are also shortfalls with the London Metropolitan Police Service's attempts to involve the public: their impact assessments

seem to suggest that providing websites and reading relevant reports constitutes public consultation. Moreover it is hard to assess to what extent concerns raised by stakeholder groups were actioned as we were unable to obtain interviews with any MPS representatives.

Despite significant and recurring concerns from civil society, government bodies and key oversight actors, both South Wales Police and the London Metropolitan Police Service intend (at the time of writing this report) to accelerate their use of facial recognition technologies. Having said that, our findings paint a different picture in Scotland where a more thorough engagement with the issues at stake and Scottish civil society appears to have provided space for debate and a more cautious approach to FRT. Further, our findings indicate that the oversight ecosystem surrounding MPS and SWP could be made more open to public scrutiny and citizen intervention: whereas the Scottish Biometrics Commissioner's remit ostensibly provides a mandate for public engagement, we found that oversight groups in England and Wales operate behind closed doors and public information about their activities is sometimes hard to find. As it stands, ethics committees and advisory groups seem like a missed opportunity to seek public input. To a large extent this lack of institutional consultation defines the problem that this project has sought to explore and frames the rest of this discussion; given this absence, where else and how can meaningful opportunities for civic participation be found?

Model of civic engagement

Deliberative models that have emerged in the conceptual context of democratic innovations have allowed for a more thorough investigation into public perspectives on data and AI and have enabled a wider range of citizen voices to be incorporated in policy debate. Citizen juries and citizen summits, among other types of initiatives, have been held to explore opportunities and challenges of data use in areas such as health care, criminal justice and biometrics, and have informed governmental decision-making processes. A rapidly growing number of such events in the UK (our main country of enquiry) as well as other countries suggests an increasing recognition of the need for citizen involvement in data-related decisions, as well as the feasibility of involving non-experts in debates on complex technical issues.

However these models only serve to a certain extent as practices of democratising decision-making. Most significantly, few of them offer direct influence over the use of data technologies or transfer decision-making power to citizens. While they advance citizens' voices and may affect the normative framework of the deployment of data systems, not all of them move beyond sophisticated forms of opinion polling. The strong presence of larger institutions, government and companies demonstrates the mainstreaming of democratic innovations but raises questions regarding the degree to which they may enable the formation of truly citizen-centred agendas. Some initiatives have shown bias in their design and organisation towards an expansion of data uses. While we did not encounter any obvious cases of 'participation-washing' in which public engagement is merely sought to legitimise policy decisions, the increasing popularity of these methods reflects growing pressure on government to engage the public and address public concerns.

While ideal-type mini-publics recruit participants through random selection, our research showed that the characteristics

of data-driven decision-making require particular attention to the inclusion of marginalised communities and those that are particularly affected. Models therefore need certain adaptations as they are applied to new issues. Finally, a significant shortcoming of deliberative methods is their ad-hoc nature as, typically, one-off events. Permanent mini-publics and other institutionalised mechanisms remain an interesting idea, for the time being, with regards to decision-making on the deployment of data systems.

Oversight and advisory bodies

In response to this limitation, our research traced the wider ecology of formal oversight bodies and complementary advisory institutions in the UK that are tasked with the promotion of lawful, ethical and citizen-oriented data use and governance. The findings illustrate that these bodies have overlapping remits and typically take a soft-touch, advisory approach to oversight. The Ada Lovelace Institute's call for a facial recognition moratorium may stand out as a more forceful approach but is not linked to a formal regulatory role. Further, a lack of power and enforcement means oversight bodies are heavily reliant on producing ethical frameworks and guidance in order to affect positive change. While most of our interviewees emphasised the accountability of these institutions to the public, opportunities for the public to engage in oversight are limited. Instead of participatory forms of accountability, the findings point to a paternalistic oversight landscape in which these bodies educate and inform citizens and protect their interests by taking forward individual complaints, but focus less on providing opportunities for direct public scrutiny of data governance. There is also cause for concern about the extent to which some oversight bodies are able to act independently outside of government influence, particularly if they are reliant on governmental funding.

Where oversight bodies have provided opportunities for citizen participation, for instance regarding the deliberation of data ethics and safeguards, the research suggests these are limited in two important ways. Firstly, the growing number of deliberative engagement projects and exercises carried out remain short-term projects or sporadic exercises that do not constitute a coherent or systematic civic participation paradigm. Secondly, the content and purpose of this engagement has often been confined to gathering public opinions and attitudes or, less often, deliberating and deciding the principles, ethics, values and safeguards that should govern data-driven technologies. While these may be promising steps in a more participatory direction, they fall short of a more comprehensive democratisation of decision making about datafication. At the same time, though, new practices and models of community oversight are emerging which may complement the institutional and paternalistic oversight provided by the official oversight framework. While existing cases are imperfect regarding, e.g., the inclusivity of the process and the extent of enabling meaningful participation beyond individuals vocalising concerns, they demonstrate the relevance of enhancing civic participation in oversight mechanisms.

Civil society strategies

The research illustrates that there is a considerable level of concern amongst civil society groups about the rapid roll-out of data systems in the public sector, and that a lack of community and citizen participation is central to such concern. To this end civil society organisations (CSOs) pursue a range of strategies to advance citizen voices in data governance debates. From policy advocacy to the provision of practical data rights tools and to strategic litigation, they have applied diverse approaches to advance civic rights, address data harms and make datafication more accountable. However these strategies are often limited in their scope, they are also considered limited in their scope in that they tend to be 'reactive' (after the harm) rather than 'proactive' (preventing the harm). This means that CSOs currently struggle to hold government and public bodies accountable for data-driven decision-making and decisions about the use of data technologies. Tools like FOIs and SARs that should support civil society are limited because they expose harm too late, while impact assessments and consultations prove weak as they fail to provide civil society with adequate input into live policy developments. In light of these shortfalls, public procurement processes are seen as one potential site of civil society intervention and scrutiny where citizen interests could be advanced.

A broader issue suggested by the findings concerns the representation and accountability of CSOs. Civil society activity in relation to data issues has been relatively fragmented, partly informed by the perception of digital rights and social justice as separate agendas. This separation was considered to also stifle forms of civic participation especially in terms of reaching impacted communities and incorporating their experiences into strategy and advocacy work. However our research demonstrates that cross-sector alliances and collaborations are beginning to emerge and bridge the gap between technology focused groups and other social justice initiatives. This is illustrated by the coalitions highlighted between digital rights networks and refugee networks, between social security workers, local activists and unions, and between teachers, parent groups, anti-racism groups and migrants' rights organisations. These can help to raise awareness, build solidarity between different groups and mobilise citizens, even if they do not result in an immediate civil society 'win'.

At the same time, the findings show that CSOs acknowledge the need to better represent affected communities in relation to data governance and data harm. Engaging frontline public sector professionals such as social workers and debt counsellors was said to provide CSOs with indirect access to service user voices and is becoming an important strategy for CSOs to better represent those communities most impacted by datafied public services. Our research also highlights local community organising through which CSOs seek to include and have direct contact with impacted communities by doing work on the ground with local activists and residents in order to empower them to exercise their rights or engage in campaigning. Although there are tentative indications that strategic litigation can be effective at resisting and redressing data harms on behalf of affected citizens (examples highlighted by this project include the Dutch SyRI case, Liberty's facial recognition appeal, and the joint efforts of Liberty and MRN regarding hostile environment data sharing)[29], we should acknowledge the limitations of this strategy as being unpredictable, slow and expensive.

29 Since the completion of this project the tech justice law firm Foxglove has also put forward several successful legal challenges against unjust uses of data-centric technologies.

This strategy also does little to encourage bottom-up participation since communities are reliant on institutionalised and often centrally-located CSOs with sufficient resources and legal expertise to take such action.

Alternative imaginaries and infrastructures

The research points to five data imaginaries that represent different templates for transforming or resisting datafication, but which all privilege citizen over state and private interests. First, rethinking data as a public good in the hands of the people has been manifested in the creation of new bottom up data governance models and public-owned digital infrastructures like the data commons and Decidim platform in Barcelona. However, the promises of technological sovereignty and data commons to reorganise and democratise society, as well as to forge new state-citizen relations, may be ambitious in the context of persistent and established political decision-making structures. The second imaginary concerns the accountability of algorithms, with suggestions to advance civic opportunities in shaping algorithms to 'correct' historical bias and inequity. However, both these imaginaries highlight limitations of applying technical solutions to non-technical problems, and they may evoke an underlying belief in the ontological validity and objectivity of data.

In contrast, the third imaginary involves rethinking public procurement as a key site for citizen and democratic intervention and is influenced by community wealth building and public ownership debates. Following this, the fourth imaginary aims to institutionalise participation through the creation of citizen bodies that have access to decision-making processes. Both of these seek wider democratic reform. Variations of progressive procurement have been implemented in several UK councils as well as Barcelona City Council, and the findings indicate that this could be leveraged to systematise a degree of citizen participation before data systems are implemented, while potentially disrupting problematic outsourcing practices in the public sector by holding suppliers of data-centric technologies more accountable. Finally, the fifth imaginary resists the power structures upholding datafied inequality and envisages communities reclaiming and reappropriating data driven technologies. The concept of big data abolition, as advanced by Data For Black Lives (D4BL), involves communities in creating new data infrastructures from the bottom up while simultaneously dismantling the power structures that uphold the status quo.

The findings point to an unresolved tension between the individual and the collective dimension within several of these imaginaries, highlighting the issue of individualised solutions to collective problems. This is evident, for example, within MyData, which seeks to challenge the dominance of platform monopolies by providing citizens with more control over their data while this approach of empowering individuals to make rational decisions offers limited avenues for civic participation. This competes with a civic agency imaginary that may advance participation and collective relations through proposals for civic uses of data, but in practice has less traction in concrete policy debate.[30] Finally, the findings suggest a significant disclaimer: While putting data

30 As noted at the beginning of this report, we did not explore the possibilities of data trusts and other forms of data stewardship in this report.

and data infrastructures in the hands of the people is a democratic endeavour, more attention needs to be paid to underlying norms and values that guide empowered citizens and communities.

Data literacy

While the discussion of imaginaries exposed the limitations of approaches that prioritise individual empowerment, we recognise that knowledge and understanding of datafication are crucial components of any participatory strategy. Our research focused on data literacy tools that aim to give citizens practical strategies for navigating and engaging with datafied society, from public guides for data rights to resources for community resistance to surveillance. Particularly welcome are tools like workshop resources which bring groups of citizens together and mould the practice of data literacy into a collective endeavour.

However, it is difficult to ascertain whether or how citizens that use such tools then translate this understanding into participatory acts. In addition, it is hard to measure the success and impact of tools that are aimed at broad audiences like 'the public' or 'citizens'. This speaks to the wider issue that universalist approaches that try to 'scale-up' literacy may not be as useful as those which are contextual and more firmly rooted in the everyday realities of communities. To achieve this, though, the findings highlight the importance of dissemination strategies to those communities that need it most or would be less likely to independently come across literacy initiatives.

The prevailing interpretation of data literacy among tool creators is critical awareness of how data infrastructures work as well as their societal consequences and underlying political-economic structures. Moreover, data literacy is viewed as an important component and precondition of citizen empowerment, agency and participation. Yet it was acknowledged that this can bestow data literacy with a gatekeeper role that might do more to exacerbate rather than alleviate existing social inequalities by excluding those not sufficiently 'data literate'. Finally, the findings highlight that data literacy tools and practices can have significant impact when they are created and/or used by communities to advance their own collective needs or political goals (though we acknowledge the dominance of US examples in our analysis). These approaches to literacy have emerged from the ground up and go beyond the idea of individual awareness, agency and autonomy. For instance, this was the case with the Stop LAPD Spying Coalition's popular education strategy, which fed into the Algorithmic Ecology tool, and helped to shape the Coalition's collective resistance to PredPol and other datafied policing techniques.

Towards the democratisation of data governance

Most of the approaches discussed here - and, in more detail, in the different sections of this report - offer promising building-blocks towards a greater involvement of citizens in decisions about the deployment and use of data systems. They reflect a growing recognition that people have been subjected to far-reaching forms of data analytics, with their lives being significantly affected, but without much understanding,

voice and influence. They demonstrate that the inaccessibility of data-related decision-making is not grounded in the complexity of the issue as 'normal people' are capable of understanding and deciding on questions of datafication both regarding specific applications and wider societal consequences. We have seen that there is no lack of ideas and concepts to both imagine and construct participatory forms of data governance. And, perhaps most significantly, a wide variety of existing practices - from citizen summits to community oversight, and from civil society campaigns to data literacy online tools - are carving out participatory spaces piece by piece and enhancing civic engagement.

However, and as this research has shown, they face multiple limitations and challenges. Most of the practices that we have analysed exist only as isolated and ad-hoc efforts and do not form a coherent and systematic approach towards greater participation in decision-making. Grassroots-led and civil society initiatives face a lack of resources while the involvement of larger institutions may compromise the development of genuine citizen agendas. Underlying concepts and normative frames are fractured, with little agreement on, for example, the role of individual vs collective strategies, or the relation between digital rights and social justice concerns. The political and institutional context of civic engagement is often hostile and serves to push back efforts of involvement and intervention, as the first section of our report has demonstrated. And further, the model of representative democracy in the UK and other countries has allowed only very limited inroads for civic participation.

If we return to the fundamental question posed at the beginning of the report - What is the shape and degree of influence that is conveyed to citizens and communities? - a mixed picture emerges. We may not have encountered outright cases of "participation washing" but the practices we analysed are a long way off the actual delegation of power. With Pateman (1970), we can observe cases of "partial participation" in which participants, organisations and initiatives are able to influence decision-making, but in some instances the lack of actual power to affect the outcomes of processes and policies may rather be characterised as Pateman's "pseudo participation". This may translate to the middle rungs of Arnstein's ladder (see conceptual section), described by her as 'tokenism' as power holders provide opportunities to be informed or consulted, allowing citizens "to hear and be heard" but without necessarily implementing their decisions and perspectives. However some of the deliberative models and civil society initiatives that we explored may amount to a slightly higher form of participation whereby participants have an advisory role although power holders still maintain the right to decide. In some instances, particularly with regards to self-organised data infrastructures, a higher degree of what Arnstein calls 'citizen power' may be achieved, whereas the limited consultative practices observed in section 1 may not go beyond what she terms 'therapy' and thus 'nonparticipation'.

These conclusions may be sobering, but the variety of practices is leaving a mark on policy debates and affecting the normative framework in which decisions (by governments and other institutions) are made. The diverse experiences of engagement and intervention point to a very dynamic field that is likely to expand. While many practices are currently ad-hoc and experimental, they offer promising building-blocks for a more comprehensive strategy of advancing participation in the datafied society.

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