



Selected Papers of #AoIR2017:
The 18th Annual Conference of the
Association of Internet Researchers
Tartu, Estonia / 18-21 October 2017

Panel Title: DATA-DRIVEN MODELS OF GOVERNANCE ACROSS BORDERS: ASSESSING PARTICIPATION, INCLUSION AND CONVERGENCE IN THE DIGITAL ERA

Participants: Payal Arora, Anika Hüggle, René König, Jason Pridmore, Mirko T. Schäfer, and Hallam Stevens.

Overview

We have come quite a distance from Chris Anderson's "end of theory" euphoria for big data at the helm of decision-making for the betterment of society (2008). Today, numerous scholars have critiqued data-centrism in policy-making and practice (for example, boyd and Crawford 2011). Hannah Arendt argues that governance has repeatedly fallen victim to the "utterly irrational confidence in the calculability of reality" (1972). However, we are also witnessing a number of social innovations across the world that are strategically leveraging on digitization to enable a more transparent, inclusive and representative form of political enactment. These social experiments promise to break away from traditional modes of institutional practice and offer instead a more vibrant form of democratic engagement, empowered by the affordances of "datafication."

This panel critically assesses the nature and role of data emerging from new forms of information and communication technologies in the shaping of social order. Each paper in this panel evaluates the particulars of select social innovations posited to strengthen policymaking and citizen activism in the digital era. The papers that make up this panel move beyond polarizing dialectical perspectives by illuminating the ways in which databases have enabled newer forms of mobilization and solidarity but have equally allowed for novel and hitherto unimagined operations of state and corporate power. We aim for a more nuanced and complex understanding of how a multiplicity of social actors come to play in the makings of public service in the big data era.

The first paper examines two new models of governance emerging in the Global South – the social credit system in the People's Republic of China and the biometric identity system in India. Each promises to consolidate public services and citizen identities for social good. The second paper analyzes the opening of government data in Singapore through the website *data.gov.sg*. It examines the motivations behind such opening of data and assesses the extent to which it enables citizen and civil society action. The third paper examines the emergence of data-driven cities in the Netherlands, comparing Amsterdam, Utrecht, Eindhoven, and Dordrecht. A fourth paper focuses on user experiences in relation to mobile privacy in the United States and the Netherlands. It focuses on everyday negotiations and the participation of citizen/consumers in

Arora, P., Hüggle, A., König, R., Pridmore, J., Schafer, M., Stevens, H. (2017, October 18-21). *Data-Driven Models Of Governance Across Borders: Assessing Participation, Inclusion And Convergence In The Digital Era*. Paper presented at AoIR 2017: The 18th Annual Conference of the Association of Internet Researchers. Tartu, Estonia: AoIR. Retrieved from <http://spir.aoir.org>.

the production of different forms of data within these two countries. The final paper turns attention to the role of “citizen conferences” in Germany and proposes new approaches to policy-making that emerge from both digital and material engagements.

The studies in these papers are situated in diverse models of policy-making, governance, and/or activism across borders. They address the datafication of publics, spaces and social interactions. Thereby, this panel opens up a conversation on global templates of databased governance through the lens of participation, inclusion and convergence. This is occurring within increasingly networked publics, raising questions for instance about privacy in context (see for instance Nissenbaum 2009), divides between digital and material practices or online-offline distinctions, the potentials for urban-digital commons, and the embeddedness of value laden systems, particularly with regard to their enculturation across different (political, social, and economic) contexts. By comparing examples emerging from different national and political circumstances, we hope to illuminate the diverse potentialities and valences of big data. Moreover, these panels examine both top-down and highly centralized efforts to mobilize data, alongside citizen-driven, bottom-up data-collection schemes. By placing these cases side-by-side, we hope to show the vastly divergent possibilities and meanings of data work, as well as suggesting some limitations of data’s democratic potential.

References

Anderson, C. (2008). The end of theory: The data deluge makes the scientific method obsolete. *Wired*, 23 June. <https://www.wired.com/2008/06/pb-theory/>

Arendt, H. (1972). *Crises of the Republic*. New York: Harcourt Brace Jovanovich.

boyd, d. and K. Crawford (2011). Six provocations for big data. A decade in Internet time: Symposium on the dynamics of Internet and society, 21 September. Available at SSRN: <http://dx.doi.org/10.2139/ssrn.1926431>

Nissenbaum, H. (2009). *Privacy in context: Technology, policy, and the integrity of social life*. Stanford University Press.

PAPER 1: EMERGING DATABASED DEMOCRACIES IN CHINA AND INDIA

Author: Payal Arora

Democracy is not just an ideal but also an aspiration, a just system of governance, and a model of what a 'good' society looks like. Democracy at its most basic is the rule of the majority, the rule of the commoners, and it was the most successful political idea of the 20th century. Today however, democracy as we know it is under serious threat. The political climate today reveals how the old champions and power centers of the West such as the United Kingdom and the United States are moving towards non-inclusive and even discriminatory social policies, defying the packaged dream called democracy. What we see in the last decade is entrenched oligarchy that has resulted in what Thomas Piketty has shown us is an astonishing widening of social and economic inequality (2014). As these nations become inward looking, nostalgic of a fictional monochromatic past of a non-diverse state, nations beyond the West have gained credence in promoting alternative models of governance for the common good. This paper critically examines two new models emerging from the Global South, specifically India and China, enabled by new digital technologies.

The first model, the Biometric Identity initiative known as the Aadhaar project in India is an ambitious and historically unprecedented databased model of governance. Major news outlets such as the BBC endorse this effort as they report how the poor, "with no proof to offer of their existence will leapfrog into a national online system, another global first, where their identities can be validated anytime anywhere in a few seconds" (Rai, 2012). The goal of the project is to provide a unique identification number (UID) to each of the 1.2 billion Indian citizens through the capturing of their fingerprints, iris scans, and photographs. This consolidated digital identity will serve as a primary portal through which citizens can gain access to all government services such as welfare, banking and rationing of food for those on the margins of society. It aims to bring all of the undocumented poor into the system. R. S. Sharma, the secretary of the Department of Electronics & Information Technology in India declared that, "digital India is not for rich people . . . it is for poor people." (Arora, 2016, p. 1684). There is some truth to this claim. It is a fact that majority of India's citizens lack any form of identity such as a passport or a resident permit, making it difficult to disseminate welfare benefits to the masses. Intermediaries have capitalized on this by using fake identities to siphon off much of the \$60 billion in welfare benefits earmarked for the poor. It is no wonder that this project stands as a contemporary crusader against corruption. However, numerous challenges inundate this process including privacy and human rights violations, duplications and weak institutional measures against data breaches.

The second model emerges from China. China has a vision of a good society and a good citizen and is in the midst of creating a unified digital system to foster this vision. By 2020, China intends to institute the Social Credit System. By combining the citizens' financial records, online shopping data, social media behavior and employment history, the system will produce a 'social credit' score for each citizen. This rating system will be used to measure the citizens' trustworthiness. Each citizen will earn 'credit' through good behavior, online and offline. This will directly affect their access to all kinds of public services including the nation's financial credit system. In essence, it is a value-embedded system meant to encourage good behavior and discourage bad behavior. This system can get highly discriminatory as the scanning of social media accounts can sentence people to unemployment, slow Internet connectivity, and travel

visa bans based on them liking a dissenting post or being friends with those who don't share the state's values (Markey, 2016). Technology companies that do not comply with these 'ethics' could be extensively fined for supporting so-called immoral and indecent content.

By looking at democracy's three core dimensions - the socio-political, the economic and the legal, and how big data intersects with them, this study analyzes the following questions in the context of India and China: does digitization of citizen data reduce or entrench discrimination? Is the internet enabling a more level playing field by helping citizens circumvent old intermediaries of power? How are these systems ensuring security for their citizens? Through content analysis of news articles, government websites and reports, and popular citizen and activist blogs from January 2016 to December 2016, this paper reveals a complex narrative that goes beyond the typical Western lens of authoritarianism and state surveillance. In cultures such as in India and China where the notion of privacy is foreign to their language and their social practice and where individuality holds a different value, these new models of governance serve more as a promise than a threat. This paper reveals how these data-based governance systems are celebrated by many for their efficacy, empowerment, innovation and for their propositions of alternative social justice among multiple local and foreign actors. By juxtaposing these emerging systems of databased democracies against the normative values from Western models that privilege privacy, this study reveals the crossroads we are at when it comes to what constitutes as global participation, convergence and social inclusion in this digital age.

References

Arora, P. (2016). Bottom of the data pyramid: Big data and the global south. *International Journal of Communication*, 10, 1681–1699.

Markey, D. (March 16, 2016). The Socialist Network: Why China's proposed credit rating system is anything but credible. Retrieved from the *Brown Political Review* website: <http://www.brownpoliticalreview.org/2016/03/the-socialist-network-why-chinas-proposed-credit-rating-system-is-anything-but-credible/>

Piketty T. (2014) *Capital in the Twenty-First Century*. Belknap Press, Cambridge, MA.

Rai, S. (2012, June 6). Why India's identity scheme is groundbreaking. Retrieved from the *BBC* website: <http://www.bbc.com/news/world-asia-india-18156858>

PAPER 2: VISIONS OF SMART CITIES AND CIVIL PARTICIPATION

Author: Mirko T. Schäfer

The labels “Big Data” and “Smart Cities” promise social progress through technological advancement. Applying novel means of data collection and analyses is expected to provide new insights that improve public administration, stimulate civic participation and advance economic prosperity (Mayer-Schönberger and Cukier 2013; Townsend 2013). However, as global innovative entrepreneurs penetrate with their services the realm of the public sphere (e.g. Facebook), public space (e.g. AirBnB, Nextdoor, or Uber), education (e.g. Udacity, or Coursera) and health care (e.g. Google Health), traditional public service media and public administration bodies alike face a serious questioning of their legitimacy and sovereignty (van Dijck, Poell, and de Waal 2016). Next to these challenges, many more – often profane – challenges arise from lack of data literacy to issues of application (van den Hoven 1998)

While the general attention is focused on the Silicon Valley developers of big data applications, small and medium businesses, maker spaces, hacker labs and individual programmers are also developing promising solutions. In the Netherlands, many municipalities already developed smart cities initiatives and are actively seeking ways to exploit data practices for cost-efficient management, for improving quality of life for residents, and for stimulating local and national entrepreneurial activities (Kist 2015; Krianotis 2016; Vereniging van Nederlandse Gemeenten 2015). Often these initiatives are experimental and explorative. They have an impact on the local level, both in terms of generating economic activity and in terms of finding solutions to local problems. But beyond that, these smart city initiatives are valuable because they contribute to a city’s new digital infrastructure (e.g. big data management) and its public management’s and citizens’ big data literacy skills.

With the current tendency towards a more accountable and transparent government and the rapid development of technological possibilities, many open data initiatives on both a local and a national level have been initiated (Lathrop and Ruma 2010; Wohlers and Bernier 2015). These data initiatives are symptomatic for the emergence of what has been called amongst other things a “datafied society” (Schäfer and van Es 2016). Cities in the Netherlands are eager to implement data practices for more efficient public management. From large cities like Amsterdam (number 1 of the 85 largest municipalities in NL) or Utrecht (number 4) to smaller ones like Dordrecht (number 23) or Hollands-Kroon (number 85), public administrations are keen to invest in data practices. The size of the investment varies as does their vision of what a smart city is and which role technology, governance and the residents might play. The smart cities initiatives carried out in these cities, initiated explorative projects to develop data-driven applications for public management. Apart from some platforms for knowledge transfer, such as the G4 CIO Summit for information managers of the four leading cities, little exchange and opportunity for comparative analysis and exchange of experiences has been developed.

This paper exploratively investigates the smart city initiatives of four cities in the Netherlands (different in size, political representation in the council, and budget for the development of data practices). The authors have worked for the past three years closely with various municipalities through carrying out commissioned research projects on data issues. This ethnographic angle provided deep insight into the smart cities activities, the challenges and the opportunities that emerged. It provided the authors with rich data about the various actors of change that drive these initiatives. This paper also compares the different visions for a smart city as formulated in policy papers, interviews with officials and the project descriptions of the explorative smart city projects. Our findings indicate that the development of data-practices and the realization of the so-called smart city is asymmetrically distributed. The vision of what a smart city constitutes is

different and ranges from top-down governance to inclusive approaches where various stakeholders are invited to participate. The citizens appear in these visions as clients who can expect public management to be nothing more than cost-effective facility management or as participants in co-creating opportunities for education, sustainability, economic prosperity and political participation. Data practices are inherently political. Citizens and their social interactions, their movements in urban space, their consumption of goods, services and energy are all recorded in data. The work with these data is inherently political and can constitute significant impact on the personal livelihood. Our paper shows how municipalities are aware of this significance and how they address it, opening up possibilities for a socio-political debate about our data and our cities.

References

- Kist, R. (2015) Amsterdam Gaat Met Big Data De Toeristendrukke Te Lijf. nrc.nl. NRC, last modified July 20, accessed October 31, 2016, <https://www.nrc.nl/nieuws/2015/07/20/amsterdam-gaat-met-big-data-de-toeristendrukke-te-lijf-a1495782>.
- Krianotis, L. (2016) Amsterdam Gaat Illegale AirBnB's Aanpakken Met 'Big Data'. NOS, last modified February 15, accessed October 31, 2016, <http://nos.nl/artikel/2087106-amsterdam-gaat-illegale-airbnb-s-aanpakken-met-big-data.html>.
- Lathrop, D. and L. Ruma, eds (2010) *Open Government: Collaboration, Transparency, and Participation in Practice*. Sebastopol, CA: O'Reilly Media, Inc.
- Mayer-Schönberger, V. and K. Cukier (2013) *Big Data: A Revolution that Will Transform how we Live, Work, and Think*. New York, NY: Houghton Mifflin Harcourt Publishing Company.
- Schäfer, M. T. and K. van Es, eds. (2016) *The Datafied Society: Studying Culture through Data*. Amsterdam: Amsterdam University Press.
- Townsend, Anthony M (2013) *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*. New York, NY: W.W. Norton & Company.
- van den Hoven, M. J. (1998) Moral Responsibility, Public Office and Information Technology. In *Public Administration in an Information Age*, edited by I. Th M. Snellen and W. B. J. H. van de Donk, 97-112. Amsterdam: IOS Press.
- van Dijck, J., T. Poell, and M. de Waal. (2016) *De Platform Samenleving: Strijd Om Publieke Waarden in Een Online Wereld*. Amsterdam: Amsterdam University Press.
- Vereniging van Nederlandse Gemeenten (2015) Hoe Kunnen Gemeenten Big Data Inzetten in Veiligheidsdomein? Vereniging van Nederlandse Gemeenten, last modified May 22, accessed October 31, 2016, <https://vng.nl/onderwerpenindex/veiligheid/veiligheidsbeleid/nieuws/hoe-kunnen-gemeenten-big-data-inzetten-in-veiligheidsdomein>.
- Wohlers, T. E. and L. L. Bernier (2015) *Setting Sail into the Age of Digital Local Government: Trends and Best Practices*, edited by Christofer G. Reddick. Vol. 21. New York: Springer.

PAPER 3: THE GOVERNANCE OF MOBILE PRIVACY: DATA PRODUCTION AND USER EXPERIENCES IN THE NETHERLANDS AND UNITED STATES

Author: Jason Pridmore

The development of ubiquitous, almost universally available, and accessible forms of mobile and interconnected computing have positively affected the efficiency, convenience, and enjoyment of people's everyday lives. At the same time, however, these connections and devices increase the potential for more pervasive forms of digitally mediated surveillance as they produce more and more data. These data are made available to media companies, marketers, governments, employers, and Internet Service Providers (ISPs). Privacy – as implemented in policies, data protection frameworks, personal practices and privacy-enhancing technologies – can therefore be viewed as a conglomeration of strategies employed to counter the detrimental consequences such surveillance enables and a means of governing participation, inclusion and convergence.

In order to mitigate potential harms and concerns arising from increased mobile surveillance, individuals may employ various privacy practices – not as an antidote to surveillance (Stalder, 2002), but as a means for limiting the reach of surveillance. At the same time, technological advances have shifted evaluations of privacy “problems” from general concerns about personal information and identity theft to concerns about data control, data security, data processing, and data secrecy (van der Ploeg, 2005). Each of these foci come with different perspectives on what is at stake, what actions should be taken, and how such actions can achieve positive change. For example, privacy as data control focuses on ensuring users have the means necessary to set limits on the use of their personal data, whereas seeing privacy as data security focuses attention on encryption technologies. More recently, accounts of privacy as contextual integrity (Nissenbaum, 2009), though valuable, remain problematic given how rapidly contexts shift, particularly in relation to mobile technologies and platforms.

This paper focuses on the development of clearer policies and practices for governing mobile privacy issues based on empirically examining everyday practices. The focus on mobile technologies is motivated by the recognition that the defining features of contemporary society are its social, physical, and intellectual mobility (Pierson, 1973). Participation in contemporary life increasingly demands a high level of mobility and is coupled with the fundamental assumption that individuals are granted the right to explore new physical and intellectual terrain relatively free from intrusive oversight by governmental or private entities. This entails a crossing of multiple borders, including geographic, social, economic, cultural and political borders. Without these freedoms, we cannot understand our world or develop the awareness and competencies necessary for effective participation in social, economic, cultural, and political life. Smartphones, tablets, and other mobile connected devices have become the primary channel through which individuals connect with, explore, and understand the world around them; consequently, it is critical to protect and understand the data that are being produced through the everyday use of these devices and how these might be made thus preserving individual freedoms as well.

This paper is based on a mix of research methods, including interviews, focus groups and survey analysis that has been completed in both the Netherlands and the United States. The paper traces out our initial findings into mobile users' mental models of privacy and how this

might further inform governance practices regarding the production of citizen/consumer data. These are evaluated alongside the perceived social costs (e.g., interpersonal and institutional surveillance), affordances (e.g., ubiquitous communication, facilitated social coordination), and (un)anticipated byproducts (e.g., routine upkeep of profiles and configuring settings) associated with the pervasive use of mobile technologies. Given the ubiquity of these practices and the effects of cultural contingencies on these practices, this paper focuses on experiences in the Netherlands and the United States with specific regard to health care data and messaging services.

The findings indicate a series of daily negotiations that people make with regard to their production of data and participation in groups that produce data including sensitivities to issues of privacy. These citizen/consumers rely upon both technological and physical configurations to ensure their own personal privacy is maintained. That is, citizen/consumers utilize practical and technical affordances to limit the potential infringement of their privacy. Simultaneously they reflectively consider their own production of data and how this may affect their own experiences. The findings also demonstrate that there is a relationship between awareness of privacy and how these impact conscious and unconscious decision making on a daily basis. Most importantly, the immediacy of government and consumer surveillance seems to be rather limited, but energies are instead focused on interpersonal connections and the (potential negative) effects such data may have on these relationships.

What we begin to see in this work is how both conceptual models and practical implementations that pertain to the digital self reiterate certain tensions between privacy, disclosure, mobility and surveillance in the US and Europe. Furthermore, our findings from this research can begin to provide insights and guidance to help designers embracing the Privacy by Design framework (IPC, 2011) as well as more explicit governance capacities by legislative bodies. Given the increased participation of data production within various sites, how and why citizen/consumers choose to participate or reveal certain information about themselves or their communities, or engage with public or commercial bodies, becomes increasingly pertinent.

References

- Nissenbaum, H. (2009) *Privacy in context: Technology, policy, and the integrity of social life*. Stanford University Press.
- Pierson, G. W. (1972) *The moving American*. Allied Publisher.
- Stalder, F. (2002) Privacy is not the Antidote to Surveillance. *Surveillance & Society*, 1(1), 120–124.
- Van der Ploeg, I. der. (2005) Biometric identification technologies: Ethical implications of the informatization of the body. *Biometric Technology & Ethics*. Retrieved from http://www.danishbiometrics.org/admin/files/policy_paper_1_july_version.pdf

PAPER 4: LAY PERSPECTIVES ON BIG DATA: INSIGHTS FROM CITIZEN CONFERENCES IN GERMANY

Authors: René König and Anika Hügler

Successful governing of complex technologies requires decision-makers to be equipped with substantial expertise. This is particularly challenging for democracies, as expertise follows rather exclusive principles which may conflict with the inclusive ideas of democracies and the way they are organized (Fischer, 2009). As scholars have argued, the “reflexive modernity” (Beck, 1992; Giddens, 1990) faces self-induced risks, which became obvious with the various environmental threats caused by industrialization. In this context, experts are not just needed to tackle the problem; they themselves become part of the problem. At the same time, they often cannot provide sufficient answers to give clear and reliable guidance and society is left with vast uncertainty.

Since the 1960ies the interdisciplinary field of technology assessment (TA) has emerged to find new perspectives on this increasingly pressing issue and to provide decision-makers with options for actions beyond technocratic expert-based concepts. One frequently used approach is to involve citizens through participatory technology assessment (pTA). Over the last few decades, a number of pTA formats have been developed and applied in different contexts on various subjects. They differ in the way they are designed and how they are incorporated (or not) in the political system. Generally pTA can be regarded as a “qualitative (scientific) method for determining the attitudes, interests, and patterns of argumentation used by laypersons with regard to complex issues of science and technology policy” (Hennen, 2012, p. 40). In contrast to e.g. opinion polls, pTA follows a much more discourse-oriented approach in order to unravel the rationality of laypersons without pressing them into the tight format of a survey.

In the digital era, such lay perspectives may be particularly relevant for at least two reasons:

1. The growing impact of technology on society: Technology is increasingly not just a subject of but also a tool for governance. Already today, big data influences which information we get to see, which prices we pay, who we connect with (to name just a few examples). While we do not know, how exactly this will evolve in the future, it seems evident that technology’s deep impact on our lives is only getting bigger. Therefore, there is also a growing need to involve the affected citizens in the related decision-making.

2. The growing expert-lay divide: The increasing proximity and ubiquity of technology has not necessarily bridged the gap between experts and laypersons. Instead, technology is often “black-boxed” by hiding its complexity from the user as it is done for example through the “platformization of the web” (Helmond, 2015). The technical backend usually remains inaccessible for ordinary users (due to intentional barriers raised by the developers or a lack of knowledge on the user side). Democratic societies need to consider this knowledge gap by broadening the perspectives beyond the technocratic point of view of experts.

This contribution discusses how pTA may help to develop options for actions for decision-makers that are grounded in the reality of laypersons. It draws on insights from three citizen conferences (a specific format of pTA) conducted in Germany in 2016 as part of a larger project on the societal impact of big data. The project combined different methods and disciplines to get an encompassing perspective on this complex issue, involving working groups from sociology, political science, economics, law and ethics, using e.g. expert workshops, surveys and a representative opinion poll.

The three cities were selected by considering different geographic and demographic factors in order to achieve a certain heterogeneity. Since this method is qualitative and aims at a discourse-oriented format, the group size has to be limited and true representativeness cannot be achieved. Instead, the goal is rather to gain an understanding of typical lines of argumentation and rationales. This also requires that citizens with very different backgrounds participate. For that purpose, a random sample of adults was invited by letter (1,500-3,000 per city). On average 0.8 % of the invited participated (overall 63 persons).

All three conferences were held within one day and each one addressed three topics, which were discussed in small groups guided by trained moderators. The topics were carefully selected and involved results from a previously conducted expert workshop aiming at identifying the most pressing societal issues connected to big data. The challenge here was to narrow down the very broad topic, so that it could be efficiently discussed, while also giving citizens enough room for their own thoughts. The topics were framed along three questions:

1. Who is responsible – the state or the individual?
2. Who is in control? Is our behavior manipulated?
3. Who decides? Human or computer?

The citizens received a short text in advance, outlining the main issues behind these questions. Each group developed a list of shared perceived risks and opportunities, which was then presented and discussed together at the end of the day.

This contribution will present and analyze the main results from the citizen conferences. Furthermore, the lessons learned from applying pTA on the complex issue of big data will be discussed on a broader level with regard to the theoretical background outlined above.

References

Beck, U. (1992). *The Risk Society: Towards a New Modernity*. Sage: London.

Fischer, F. (2009). *Democracy and Expertise: Reorienting Policy Inquiry*. New York: Oxford University Press.

Giddens, A. (1990). *Consequences of Modernity*. Cambridge: Polity Press.

Helmond, A. (2015). The Platformization of the Web: Making Web Data Platform Ready. *Social Media + Society*, 1(2). <https://doi.org/10.1177/2056305115603080>

Hennen, L. (2012). Why do we still need participatory technology assessment? *Poiesis & Praxis*, 9, 27–41. <https://doi.org/10.1007/s10202-012-0122-5>