# Data Publics: Investigating the Formation and Representation of Crowds, Groups, and Clusters in Digital Economies: Final Report

Clara Crivellaro, Joe Deville, Louise Mullagh, Daniel Richards, Sebastian Weise

July 2017

The Data Publics conference ran over three days, from 31st March to 2nd April 2017. It was funded by the Digital Economy Network and the Data Science Institute (Lancaster University), with further support coming from the Centre for Mobilities Research (Lancaster University), ImaginationLancaster, the EPSRC Centre for Doctoral Training in Digital Civics (Newcastle University), and the Highwire Centre for Doctoral Training (Lancaster University). The event was organised by Clara Crivellaro (Newcastle University), Joe Deville (Lancaster University), Louise Mullagh (Lancaster University), Daniel Richards (Lancaster University), and Sebastian Weise (Newcastle University).

Here follows a report on the event, as well as reflections on next steps. In it we hope to capture some sense of the vibrancy and intellectual energy of the event, which is also captured in the separate '#DataPublics – Storified' document, which summarises just some of the responses on Twitter via the conference hashtag. We have also included examples of the visual materials used at the conference (Appendix 1) and a delegate list (Appendix 2).
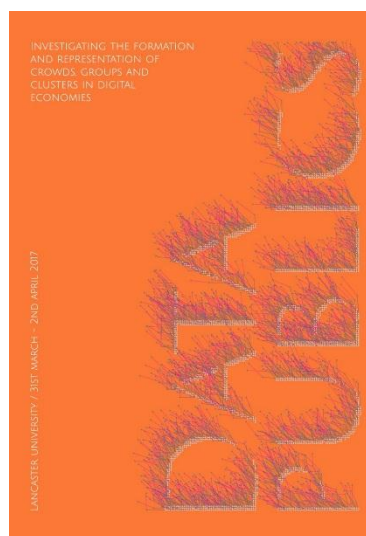
Attendance / public profile / feedback

The conference was attended by an interdisciplinary and international group of scholars, including both a substantial number of doctoral students and scholars at the full range of career stages. In total 62 delegates attended the event over the course of the three days (see delegate list). In addition, all the main conference sessions were live streamed via Periscope, with many sessions attracting over 100 unique views (both during and after the event) and one session almost 400. The event attracted considerable attention on social media, with many external users following and engaging with the #DataPublics hashtag on Twitter. We also received extremely positive in-person feedback both during and after the event, to the extent that a number of delegates, independently of one another, expressed a hope that the event would repeat, either at Lancaster or at another institution.

Parallel Workshops (31st March)

The event began with two parallel pre-conference workshops, each with a distinct focus, and each led by an experienced workshop leader.

Digital Methods/Data Visualisation

The first, titled 'Digital Methods/Data Visualisation' was led by Dr David Moats (Linköping University) and supported by a team of three other researchers (Anne Helmond (University of Amsterdam), Fernando N. van der Vlist (University of Siegen), and Laurie Waller (TU Berlin). This workshop focused on the methodological implications of studying data publics, particularly using data visualisations and digital methods techniques. It was designed as a hands-on workshop – inspired by 'data sprints' and 'hackathons' -- in which the participants undertook short research project using digital methods tools in small groups.

After collaborative discussion, the group collectively decided to focus on polling practices and their role in the construction of publics. Working with live data, small groups investigated questions such as: What kind of issue spaces open up in discussions about polling? Are the issue spaces the same? How do fake news sites connect to polling sites? How to particular polling organisations attract publics differently over time? How are different forms of polling (e.g. phone vs. online) represented in news reports about polling? These questions were explored by the groups over the course of the day in intensive, interactive sessions, culminating in final presentations by participants back to the group. On the basis of this collective work, a number of questions emerged that might form the basis for further research.

Strategies, Tools and Participatory Processes

The second workshop titled 'Strategies, Tools and Participatory Processes' was led by Clara Crivellaro (Open Lab, Newcastle University) and was supported by researcher/lecturer Rob Comber (Open Lab, Newcastle University) and Professor John Bowers (Culture Lab, Newcastle University). It considered tools and strategies to be used in the design of processes of participation in/of publics formation. More specifically the workshop

aimed to open a space for reflection on participants' existing practices and the contexts in which they operate. It also aimed to offer an opportunity for prototyping and ideating new specifically focused tools and processes by using prompts and tactics explicitly borrowed from social movement theory and practice – and then to work in teams to strategise and devise processes to be used across time and employing various tools and media.

The workshop proceeded through a series of hands-on, instruction-based activities to guide the ideation/design of processes for/of publics' formation. The first activity invited participants to work in teams to reflect on specific participatory processes on which they were currently working. This involved unpacking the varied range of actors and actions involved and their relations to one another using a timeline tool. The second activity invited participants to work together on a given context, each of which poses a specific social issue. These contexts ranged from housing development, to air quality, to public parks, to refugee crises. Each team was tasked with unpacking the issue and the stakeholders involved, before responding to it by prototyping novel offline/online tools. In the third activity team were asked to devise a strategy for a participatory process that would employ different tools to engage different publics across time. The workshop succeeded in the development of new socio-technical prototyping processes, as well as forging amongst delegates a heightened critical awareness of existing socio-technical participatory processes and of the challenges, tensions and opportunities that designing for complex socio-political and economic contexts and publics demands.

Conference (1st & 2nd April)

The main conference ran over two days following the workshops, with six keynote speakers and twenty-four paper presentations. The goal of the event was to facilitate a genuinely interdisciplinary exchange of ideas around the theme of data publics. This goal was achieved, in our view, perhaps even substantially exceeded with an inspiring series of diverse paper presentations and keynotes which combined to pull apart the notion of data publics from a wide variety of angles. For example, contents of paper presentations included: investigating remote rural communities through open data, creative works from artists using machine learning to question notions of group identity, a collaboration between ethnographer and data scientist to investigate decision making practices, explorations of public health data, interrogation of digital file formats themselves and how they impact how we use them, filter bubbles, and the role of code and data within journalism. In combination with the paper presentations, the numerous and very well-received keynote presentations helped to shape the ongoing conversations and provide foundations that were significantly built upon and debated during panel sessions as well as informal networking events.


The first keynote presentation was given by Professor John Bowers (Newcastle University) at the end of day one. This concluded the pre-conference workshops and provided a dynamic and engaging taste of things to

come over the following two conference days. John demonstrated his experimental and practice-based approach to exploring 'data publics' using a series of speculative design probes. Following John's talk, we proceeded to our first dinner /social networking event at the Lancaster University private dining rooms, with discussions continuing into the evening in at the Lancaster House Hotel bar.

Day two began with a keynote presentation from Dr Noortje Marres (Warwick University), who outlined fundamental theoretical concepts concerned with how we might understand and make sense of what 'data publics' are and how the operate. This was followed by the first set of four fifteen minute paper presentations, which, as will all such panels, were structured in such a way to so as to bring all the speakers together at the end in a half an hour panel discussion, responding to questions from the audience. This structure worked extremely well and generated considerable discussion, including about what methods might be used to investigate the commonalities and differences between the presented works which had been grouped into different themes (*activating publics, governing publics, provoking publics, emergent publics, future publics*, and *tracking publics*).
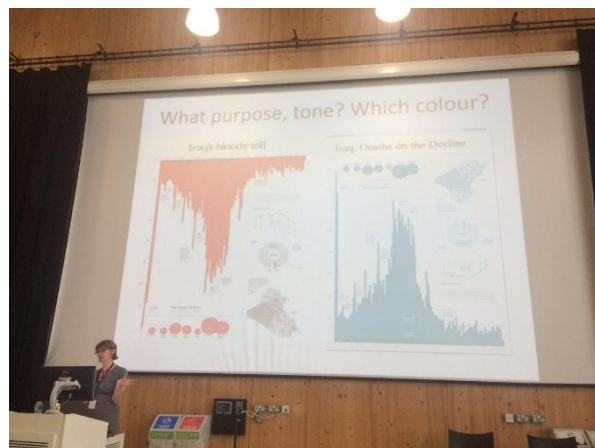

The conference resumed after lunch with a keynote presentation from Professor Helen Kennedy (Sheffield University) who demonstrated how the different modes of visualising and communicating data to stakeholders play a significant role in the perception, demarcation, and ultimately the operations of data publics. Following another parallel set of three fifteen minute paper presentations and panel discussions, the day concluded with a presentation from Dr Michiel de Lange (Utrecht University), who vividly described the impact of data publics on existing urban environments and how they will significantly impact the future of cities. After this intensive day of stimulating presentations and discussions the day concluded with a drinks reception and official opening of the Data Publics exhibition (see below), followed by our main conference dinner and networking event at the Lancaster House hotel.
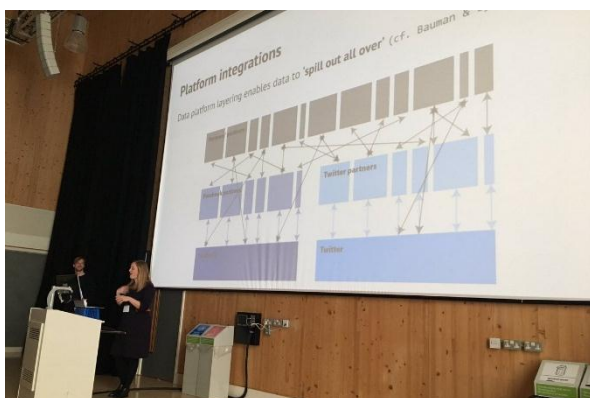
Day three began with a keynote from Alex Taylor (Microsoft Research Cambridge), who proposed a new lens with which to view and interact with data publics through novel forms of citizen engagement. This talk combined cutting edge social theory with Alex's experience in working with publics as part of a range of industry-funded projects. Following this were two sets of paper presentations and panel discussions which focused on specific sub-specific themes of data publics. The final two parallel paper sessions followed an extended lunch break, which allowed delegates further opportunities to network and see the exhibition. The event concluded with a keynote presentation from Dr Anders Koed Madsen (Aalborg University), who did an excellent job at both summarising and contextualising within a historical context some of the key issues that the event had highlighted about the constitution and fate of data publics. This included suggesting novel methods for the analysis of data publics, in his case combining quantitative and qualitative digital methods, and opening up remaining unanswered questions that might be investigated through further research and events.

Exhibition (1st & 2nd April)
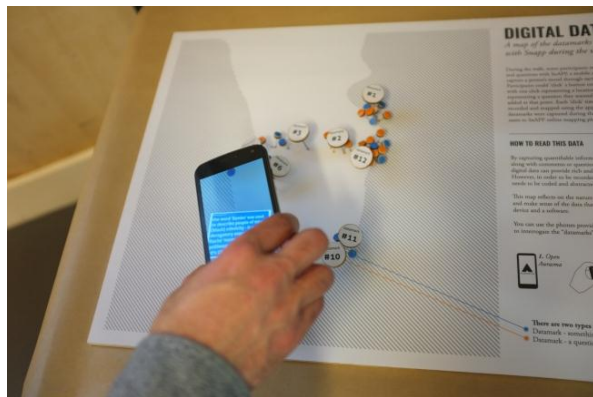
A key aim of the conference was to host a broad and interdisciplinary set of responses to the issues associated with the proliferation of 'data publics'. To that end our call for contributions included a call for exhibits. We received a highly diverse and exciting set of proposals which resulted in the Data Publics exhibition. Organised and curated by Louise Mullagh (Lancaster University), the exhibition ran over the course of the main two day conference with an array of pieces presented both inside and outside the conference building. Artists and researchers from the UK, France, Denmark and Belgium were represented, all offering fascinating insights into how we use data, how it is represented visually and the impact data has upon society.

For instance, issues regarding institutional and state decision-making were critiqued in "Turning the tables: How individual investors make use of data publics to take advantage of institutional investors" and "The Twitter-thing: Retooling the parliament into issue publics", both of which invited delegates to interact with visualisations using touch-screens. In "YouTube & the Bass" and "Anthology of the Algorithmic Self", two artist's books explored the disturbing and often humorous processes and outputs of machine learning. Challenges encountered in the display and sense making of data were explored through the practice of map making in "Walking with Data: mapping analogue and digital data around Morecambe Bay" and in the urban realm through "Like to Display", a DIY public data visualisation kit. The politics of cycling publics were represented in the 'Bicycle Barometer' film, demonstrating the interactive bicycle count display that gathers opinions and data from cyclists which are transformed into digital interactive displays. Two installations offered engaging and immersive audio-visual experiences: "her[sonifications]" took participants on a journey through the visceral experience of womanhood while "Homing" explored connections between distant locations: the battlefields of WW1 and Preston's Roll of Honour and War Memorial. Both exhibits used locative media to prompt different audio loops as users walked around the exhibit spaces.

The exhibition acted as a highly stimulating foil to the discussions associated with the various paper and keynote contributions, with delegates tending to cluster round exhibits during the breaks and drinks reception. It also succeeded in demonstrating the potential for embodied, sensory, and visual responses to the problems of data publics to open up novel analytical and methodological possibilities.

Outputs / Next Steps

The most immediate output from the conference will be a reflective piece which the conference organisers have been invited to submit to the European Association for the Study of Science and Technology Review to be published in autumn 2017. In the longer term, we are working on putting together a special issue on the theme of 'Data Publics', with the publication venue still to be decided.

In addition, we are actively exploring the possibility of organising a second Data Publics conference. One possibility that has been put forward is that the event will take place bi-annually. Potential venues for the second event include Newcastle University, with Open Lab to potentially take the lead, and Utrecht University, which keynote speaker Michiel de Lange has proposed as a potential international host.
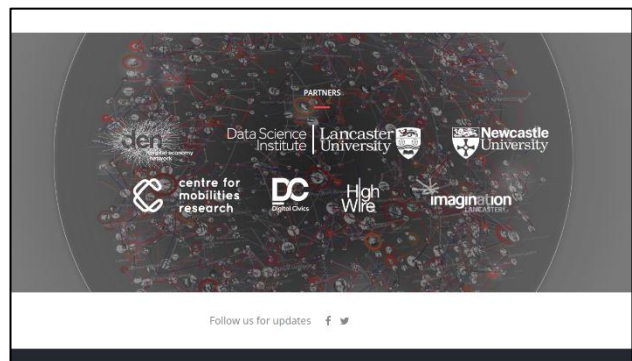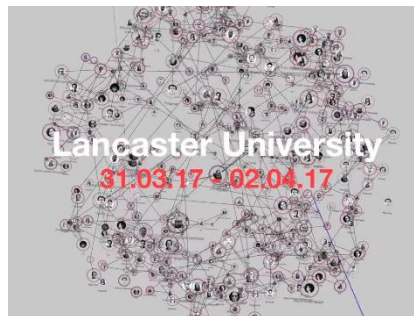
Acknowledgements

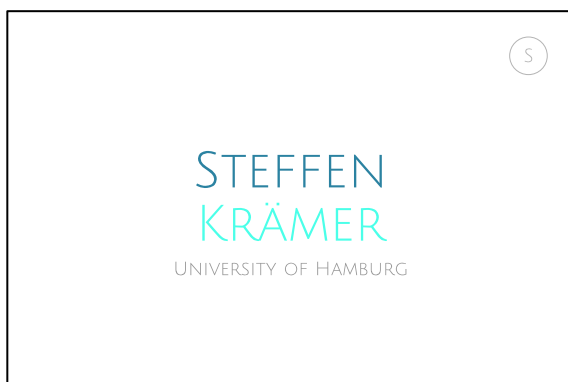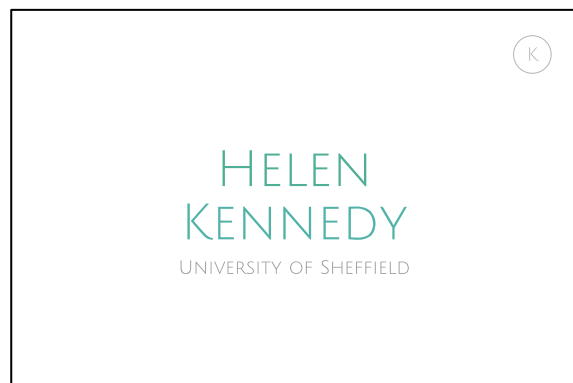# Appendix 1: Sample of visual & promotional materials

Conference website

Screenshots from online animated Call for Papers

Delegate badges (data-driven design based on delegate names)

Conference programme (sample pages)

DATA PUBLICS

INVESTIGATING THE FORMATION AND REPRESENTATION OF CROWDS, GROUPS AND CLUSTERS IN DIGITAL ECONOMIES

LANCASTER UNIVERSITY / 31ST MARCH – 2ND APRIL 2017

DATA PUBLICS:

INVESTIGATING THE FORMATION AND REPRESENTATION OF CROWDS, GROUPS AND CLUSTERS IN DIGITAL ECONOMIES

Lancaster University / 31st March – 2nd April 2017 / @datapublics / #datapublics

'THOSE INDIRECTLY AND SERIOUSLY AFFECTED FOR GOOD OR EVIL FORM A GROUP DISTINCTIVE ENOUGH TO REQUIRE RECOGNITION AND NAME. THE NAME SELECTED IS THE PUBLIC' (JOHN DEWEY, 1927)

There is a tension between how "publics" form spontaneously (for example in response to economic hardship, to create support groups, to protest about particular matters of concern) and how online users with similar consumption, browsing, movement patterns become grouped and acted upon as units of data, whether by organisations, researchers, or others. When people collectively and publicly self-organise to form a group, the identity of participants as well as the collective grouping itself may be apparent to all involved. However, with the rise, across a range of fields of digital and algorithmic technologies that work by segmenting people according to shared sets of interests, objectives, behavioural traits, and/or political persuasions, these processes as well as the identities of participants tends to be invisible to those involved. In the latter, it is only when these acts of 'assigned' collectivisation are exposed, perhaps deliberately (e.g. when confronting published research), perhaps unexpectedly (e.g. via data hacks/leaks), or perhaps when group self-recognition is achieved by users (e.g. via transparency apps/tools, social media, activism, freedom of information requests), that those involved begin to recognise their status as a "public".

Data Publics investigates the diverse ways in which publics are, and can be, constituted, provoked, threatened, understood, and represented. This includes examining the role played in the formation of publics by new on- and offline infrastructures, data visualisations, social and economic practices, research methods and creative practices, and emerging and future technologies.

Data Publics will address a range of questions, including: What are the social, economic, ethical (and other) implications of emerging and future data publics? How are data-oriented publics constituted, including in relation to digital economies? How do different conditions (e.g. social, technological, affective) impact the emergence of data-oriented publics? How are new technologies affecting the shape/direction of data publics? How can we intervene in the formation, stabilisation, destabilisation, and transformation of publics? What role might such methods/creative practices themselves play in the constitution of data publics? What forms of creative practice/visualisation/interaction design/human-computer interaction are needed to engage with data publics and to either support the emergence of or sustain such publics? What (new/existing/combination of) methods/tools are required to study/shape the emergence/fate of data publics?

These and other questions will be addressed via cross-cutting, interdisciplinary conversations between designers, social scientists and creative technologists. Through these collaborative practice, we will explore the new challenges and opportunities afforded by thinking and working with "Data Publics".

KEYNOTE

JOHN BOWERS | NEWCASTLE UNIVERSITY

John Bowers is an artist-researcher working within Culture Lab at Newcastle University with a particular interest in the use of art and design-led methods (Research Through Design) to explore digital technologies and novel interaction concepts. He also works as a sound artist improvising with electronic, digital, acoustic and electro-mechanical devices and self-made instruments in performance and installation settings, typically accompanied by live digital image. His work is often grounded in field research methods drawn from the social sciences (ethnography, interaction analysis) and related to theoretical and practical issues in Human Computer Interaction (HCI), design research, material culture, media archeology and critical theory. He leads Culture Lab's research on Digital Media.

HELEN KENNEDY | THE UNIVERSITY OF SHEFFIELD

Helen Kennedy is Professor of Digital Society at the University of Sheffield. Her research has focused on: social media, data in society, data visualisation, inequality, web design, digital identity. Recent work includes a) Seeing Data (www.seeingdata.org), which explored how non-experts relate to data visualisations, and b) Post, Mine, Repeat (2016), about what happens when social media data mining becomes ordinary (both funded by the AHRC). She is interested in critical approaches to big data and data visualisations, how people live with data, how to make datafication and its consequences transparent, and whether it's possible to 'live well' with data.

SPEAKERS

SATURDAY 1ST APRIL | CONFERENCE PROGRAMME (DAY 1)

Time	Session
9.00-9.30	Registration & coffee [LICA foyer]
9.30-9.50	Welcome & introduction [A27]
9.50-10.40	Keynote [A27], Noortje Marres (Warwick University)
10.40-11.00	Break [LICA Foyer]
11.10-12.40	Activating publics [A27] **Citizen social science and its publics,** Alexandra Albert (University of Manchester) **Investigating datafication through entrepreneurial research,** Mirko Tobias Schäfer, Gerwin van Schie, Thomas Boeschoten (Utrecht University) **Data-drifts: An inclusive route to remote community engagement with open data,** Johanna Walker (University of Southampton), Louise Mullagh (Lancaster University) **Shifting spaces of activism,** Elif Grant (University of Roehampton)
12.40-14.00	Lunch & exhibits [LICA foyer, A23, A36, outside LICA] **FEATURED EXHIBITS:** **Deadly crossings to Europe** David Bihanic (Université Paris I Panthéon-Sorbonne) **Twitter-things: Retooling the parliament into issue-oriented data publics,** Andreas Birkbak (Aalborg University Copenhagen), Tobias Bornakke (University of Copenhagen), Irina Papazu (Copenhagen Business School) **Publics, pluralism, protest, periods,** Manu Bruggemann, Emma Young (Lancaster University) **Like to display,** Sandy Claes, Jorgos Coenen, Andrew Vande Moere (University of Leuven)
14.00-14.50	Keynote [A27], Helen Kennedy (The University of Sheffield)
14:50-15.00	Break [LICA Foyer]

EXHIBITS

1. **(ther)sonifications:**
   Manu Bruggemann and Emma Young (Lancaster University)

2. **Deadly Crossings to Europe:**
   David Bihanic (Université Paris I Panthéon-Sorbonne)

3. **Twitter-things: Retooling the parliament into issue-oriented data publics:**
   Andreas Birkbak (Aalborg University Copenhagen), Tobias Bornakke (University of Copenhagen), and Irina Papazu (Copenhagen Business School)

4. **Bicycle Barometer:**
   Sandy Claes and Andrew Vande Moere (University of Leuven)

5. **Anthology of the algorithmic self (parts I & II) and Youtube and the Bass:**
   Anna Ridler and Georgia Ward-Dyer (Royal College of Art)

6. **Turning the Tables:**
   How individual investors make use of data publics to take advantage of institutional investors: Emre Tarim (Lancaster University)

7. **Like to Display:**
   Sandy Claes, Jorgos Coenen, Andrew Vande Moere (University of Leuven)

8. **Walking with Data:**
   Mapping analogue and digital data in Morecambe Bay: Louise Mullagh and Serena Pollastri (Lancaster University)

9. **Homing:**
   Jen Southern and Sam Thulin (Lancaster University)

6 meter long banners at event (left full banner, right close up shot of custom data-driven typography)

Close up view (50% full size)
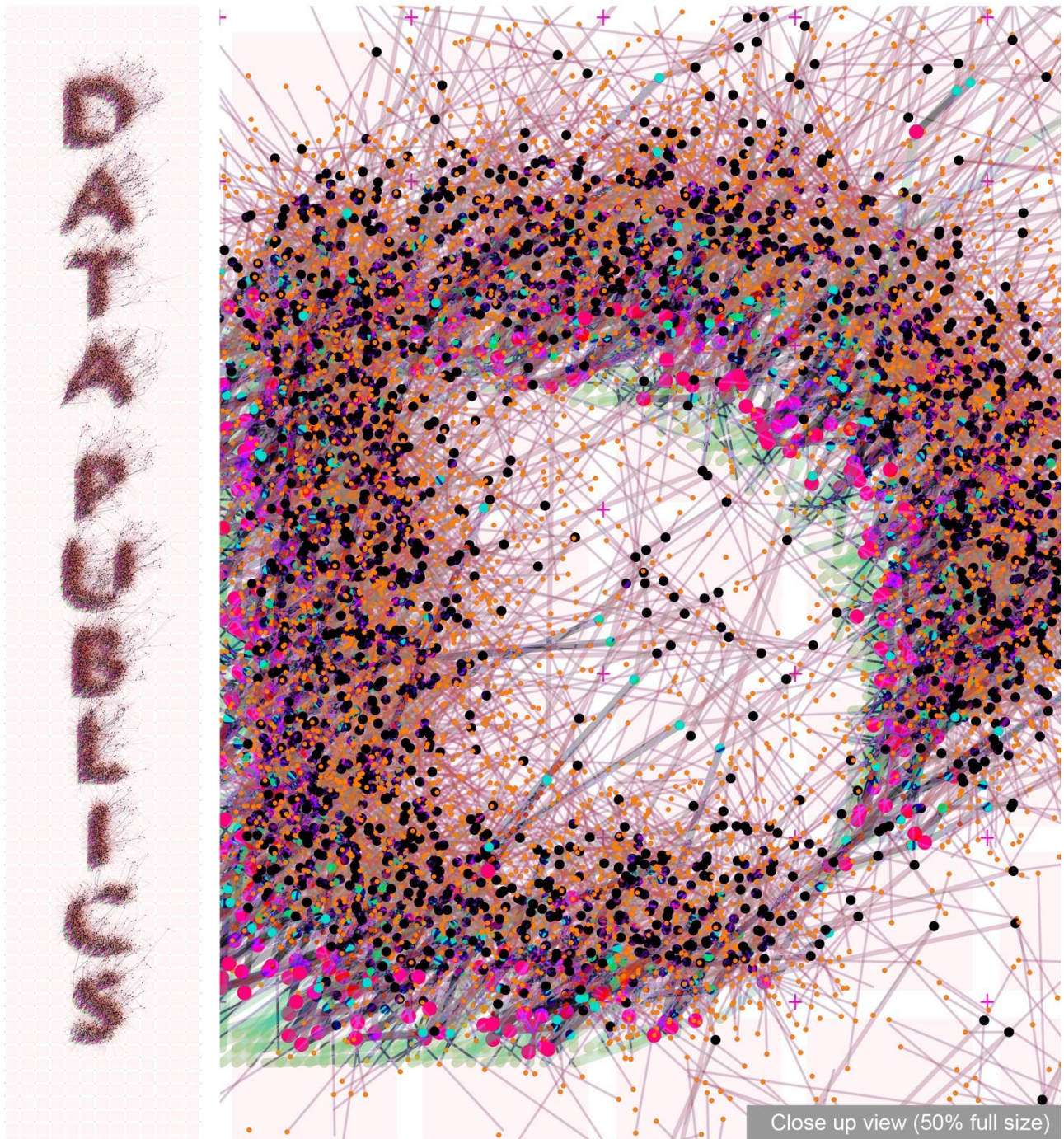
Appendix 2: Delegate List

Forename	Surname	Affiliation
Aaare	Puussarr	Newcastle University
Alex	Bowyer	Newcastle University
Alexandra	Albert	University of Manchester
Andreas	Birkbak	Aalborg University
Anna	Ridler	Royal College of Art
Caspar	Menkman	Maynooth University
Claudia	Mendes	Technical University of Munich
Daniela	van Geenen	University of Applied Sciences Utrecht
David	Bihanic	Université Paris I
David	Morar	George Mason University
Elif	Grant	University of Roehampton
Emma	Young	Lancaster University
Emre	Tamrin	Lancaster University
Gaia	Mosconi	University of Siegen
Georgia	Ward Dyer	Royal College of Art
Gerwin	van Schie	Utrecht University
Helen	Pallett	University of East Anglia
Janine	Morley	Lancaster University
Janja	Komlejenovic	Lancaster University
Johanna	Walker	University of Southampton
Jonathan	Gray	University of Bath
Josep	Almirall	University of Hull
Justin	Larner	Lancaster University
Karin	van Es	Utrecht University
Liliana	Bounegru	Universities of Groningen and Ghent
Liz	McFall	Open University
Lonneke	van der Velden	University of Amsterdam

Male	Lujàn Escalante	Lancaster University
Marta	Delatte	University of Hull
Ori	Dov	HERE (Berlin)
Paula	Bialski	University of Konstanz
Rajalakshmi	Kanagavel	University College Dublin
Roger	Whitham	Lancaster University
Sandy	Claes	University of Leuven
Sara	O'Sullivan	University College Dublin
Sean	Peacock	Newcastle University
Serena	Pollastri	Lancaster University
Jessica	Ogden	University of Southampton
Tom	Maskell	Newcastle University
Noortje	Marres	Warwick University
John	Bowers	Newcastle University
Alex	Taylor	Microsoft Research
Helen	Kennedy	University of Sheffield
Michiel	de Lange	Utrecht University
Anders	Madsen	Aalborg University
Jen	Southern	Lancaster University
Dan	Richards	Lancaster University
Joe	Deville	Lancaster University
Sebastian	Weise	Newcastle University
Anne	Helmond	University of Amsterdam
Fernando	van der Vlist	University of Siegen
David	Moats	Linkoping University
Laurie	Waller	Goldsmiths, University of London
Rob	Comber	Newcastle University
Clara	Crivellaro	Newcastle University
Louise	Mullagh	Lancaster University

Nigel   Davies   Lancaster University

Leif   Isaksen   Lancaster University

Anne   Cronin   Lancaster University

Hayley   Alter   Lancaster University

Monika   Büscher   Lancaster University

Moozhan   Shakeri   Newcastle University