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How should society shape the digital world?

Insights from a decade of Sciencewise public dialogues

The UKRI Sciencewise public dialogue programme connects the public to decision making about science and technology, leading to better research, better policy and better outcomes.

> Reports published on over 60 Sciencewise public dialogues, carried out with UK Government, the Research Councils and third sector organisations, have had major impact on UK science and innovation policy and research.¹

These reports represent a significant body of evidence about public views and preferences on socially important scientific and technological questions.



About this report

This report draws together findings from multiple Sciencewise dialogues conducted over the last decade in relation to data, AI and robotics

It is one of a series exploring what Sciencewise-supported projects reveal about public values and attitudes to contemporary scientific and technological issues, organised by Sciencewise's four key themes.²

The report series is intended to be a resource to support policy makers and

research funders considering their own dialogues or for those looking for societal insights.

Also published is an Executive Summary, synthesising key themes from across the series.

Sciencewise dialogues reviewed for this report

For this report, data, AI and robotics covers a set of interconnected issues. Sciencewise work within these topics is dominated by a focus on data.³ Sciencewise dialogues have also looked at data-driven transport and mobility including autonomous vehicles and drones.



- 1 (Facing page) See forthcoming Sciencewise report: 'How can public dialogue deliver better outcomes? Key impacts from UKRI's Sciencewise programme'.
- 2 The four reports in this series each focus on one of the Sciencewise priority themes. The four themes are:
- Climate and Environment: How can society live sustainably?
- Data, AI and Robotics: How should society shape the digital world?
- · Health, Ageing and Wellbeing: How should society live healthy lives?
- Life Sciences and Biotechnology: How should society shape the future of life?
- 3 These dialogues explore public perspectives on the societal and ethical implications associated with the collection, use and sharing of data.

Key themes

Five key themes emerge across these public dialogues:

- Data, AI and robotics technologies should distribute the risks and benefits fairly;
- 2. Business involvement should ensure both private and public benefit;
- Benefits of data sharing and data linking should be clearly communicated;
- Clear and accessible information about data sharing should be provided; and
- The public want clear accountability for harms.



Data, AI and robotics technologies should distribute the risks and benefits fairly

People view the use of data, Al and robotics technologies as presenting opportunities to tackle societal problems and potentially making society fairer by being of particular value to vulnerable groups. But their usage must avoid harm or increasing rather than reducing inequalities, according to dialogue participants.

Public views towards these innovations tend to be shaped by whether they see a clear public benefit⁴. Benefits commonly identified during dialogues include public safety, health, security, prosperity, and making everyday tasks more efficient.⁵

The public feel strongly that everyone should have access to the benefits of these technologies, for example to connected and autonomous vehicles (CAVs⁶) or the treatments coming from health research, with priority given to those who would benefit most.⁷

In dialogues about data, people often focus on risks to themselves as individuals, in contrast to benefits which they are more likely to identify as being for others or society at large.⁸ For example, dialogue participants are more likely to identify privacy risks when discussing data sharing, but when discussing research findings derived from data, are more likely to discuss wider benefits for groups of people.⁹ In these cases, they want decisionmakers to use risk assessments to weigh up the short-term potential harms to individuals versus long term benefits of research.¹⁰

The public's key concerns surround those who stand to benefit and those who are at risk from new technologies being used and misused. The concern is often expressed that those carrying the risks are not the same as those who stand to benefit. This is particularly a concern where the public discuss minority groups and vulnerable people.



Business involvement should ensure both private and public benefit

If businesses are involved in the use of data, Al and robotics research and development, the public want mechanisms in place to ensure both private and public benefit.

While the public sees potential for businesses to deliver the benefits identified above, they do not trust that businesses will always balance private and public good. They are concerned that profit could be put ahead of ethical issues or lead to negative societal impacts.¹¹ The public want the government to intervene to ensure that the private sector balances private and public good.¹²

- 4 Data science ethics, 2015-16; Connected and automated vehicles, 2018-19.
- 5 <u>Connected & autonomous vehicles</u> 2018-19; <u>Data science</u> <u>ethics</u>, 2015-16; <u>National data guardian</u>, 2020-21; <u>Online</u> <u>targeting</u>, 2020; <u>Open data</u>, 2011-12.
- 6 Often known as 'self-driving cars'.
- 7 Connected & autonomous vehicles, 2018-19; National data guardian, 2020-21; Human tissue and health data research, 2017-18.
- 8 Ethics of location data, 2021; National data guardian, 2020-21.
- 9 National data guardian, 2020-21.
- 10 National data guardian, 2020-21.
- 11 <u>Human tissue and health data research</u>, 2017-18; <u>Ethics of</u> <u>location data</u>, 2021; <u>National data guardian</u>, 2020-21.
- 12 <u>Connected & autonomous vehicles</u>, 2018-19; <u>National data</u> <u>guardian</u>, 2020-21; <u>Open data</u>, 2011-12.

The public are particularly worried about this in relation to sharing either healthrelated, or genetic data, because they see healthcare as a universal service that should not be driven by private profit. It is also partly because of distrust of the motives of private pharmaceutical companies, which, the public fear, may make treatments less widely available or expensive in favour of making a profit.

Therefore the public think that access to some data should not be shared unless there is a clear public benefit such as a contribution to health research. In addition, they think it should not be shared for marketing or insurance purposes.



Ensure there is clear and accessible information on why data is being shared

The public are often not clear on what data is being shared, how, between who and for what purpose. This contributes to a lack of trust in organisations collecting or using that data.

Participants caution this may lead to the public not consenting to the collection and use of their data, therefore reducing the potential public benefit. There needs to be clear, appropriate and accessible information more generally for the public to understand and accept the sharing of data. This is also important for ensuring informed consent.

Sciencewise dialogues show that people initially have a low awareness or understanding of the ubiquity of data acquisition¹³ and, in certain dialogues, If it's about pharmaceutical companies doing research for profit, that Joe Bloggs can't pay for, then it's not actually benefitting humankind. Those morality issues bother me, in the back of my mind.

Dialogue participant, Sheffield, Human tissue and health data research, 2018

how data plays a role in the topic they are discussing.¹⁴ The public sometimes start with misconceptions about how well developed data-driven technology is, or what the potential harms might be. This can work as a barrier to the understanding of the potential benefits, risks and harms resulting from data collection, use and sharing.

Therefore people call for greater awareness raising and ongoing engagement with the public for them to understand what the technology is and how individuals are potentially affected, including how they could benefit.¹⁵

Clear, appropriate and accessible information is also highlighted in Sciencewise dialogues as key for allowing individuals to exercise informed consent in relation to the use of their own data. This information should include clarity on the risks and benefits of sharing that data, who will have access to it, and the processes for how the data will be used. People want this information to be in a format that they can understand, where unfamiliar concepts or terms are clearly explained, and where the information is concise to avoid information overload where people cannot absorb and understand it.¹⁶

¹³ Data science ethics, 2015-16.

¹⁴ Drone use in the UK. 2015-16.

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They should lay it out as, 'This is what we're going to use your data for,' and I know they do it in the terms and conditions, but that's a big, long list.

Dialogue participant, Cardiff, Online Targeting, 2020.





Dialogue participant, Birmingham, Human tissue and health data research, 2018



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The public want clear accountability for harms

The public are concerned about an array of harms they see happening through the use of data, AI and robotics. The key issues identified are the loss of privacy or discrimination resulting from surveillance, the risk of physical injury from drones or CAVs, and potential harms from misinterpretation of open datasets.¹⁷

In order to ensure proper accountability and deter selfish use, the public want transparency about who is responsible for any harms which do occur. This is particularly true when exploring connected and autonomous vehicles (CAVs), where the public currently sees significant ambiguity over who would be accountable for accidents. The most popular way of establishing fault was through use of something similar to a 'black box' system tracking CAV activity. In the case of drones, the public want clear registers of ownership to avoid any anonymously piloted drones.

Across all of this, the public want to see effective regulation to create accountability for misuse of data, lack of security, and data breaches, as well as for any other risks to be properly mitigated against, and offenders held accountable by a regulator.

¹⁷ Data science ethics, 2015-16; Connected & automated vehicles, 2015-16; Drone use in the UK, 2015-16; Open data, 2011-12; Human tissue and health data research, 2017-18.



Conclusions

Public concerns about ensuring the fair distribution of both risks and harms is evident across Sciencewise dialogues focusing on the use of data, AI and robotics technologies. The public often show a specific concern about the impact of these technologies on vulnerable individuals and communities. This is most evident when they consider the role of business in using data or developing and implementing AI and robotics. They are generally comfortable with a role for business where public benefit can be assured and profiteering does not dominate decisions.

Sciencewise dialogues frequently demonstrate that the public can be uncertain about what data is collected, how it is used and who it is shared with. They think it is important that they are provided with information that allows them to understand this, and to be able to give informed consent. They also want clear accountability for where harms occur.



About UKRI Sciencewise

- The report is commissioned by Sciencewise, a UKRI funded public dialogue programme that supports government departments and other public bodies to listen to and act on diverse voices, to shape science and technology innovation policy and priorities. Important benefits of the programme include:
- Helping decision makers to formulate policy with a deeper understanding of public views, concerns and aspirations;
- Supporting high quality, best practice public dialogue; and
- Bringing credibility and independence to public sector-led public dialogue projects.
- Further information on the Sciencewise programme including impact case studies can be found at the following link: <u>https://sciencewise.org.uk/</u>
- To get in touch please contact: simonburall@sciencewise.org.uk and graham.bukowski@ukri.org





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