

The D4D project focused on the development of ethical frameworks for the use of big data in international development policy and practice. Its objectives were:

- 1) Achieving conceptual clarity on the difference between 'Data for Development' as a movement and the general use of data in development.
- 2) Understanding the technological implications of D4D, and where it fits within global flows of technology and innovation.
- 3) Mapping the actors involved in this emerging field, their connections and how their objectives and strategies relate to each other.
- 4) Incorporating regulatory and ethical perspectives including international development standards and protocols; data protection or fair information practices, and broader but potentially related frameworks such as bioethics guidelines.

The project gathered evidence through case studies. These included mobile phone operators producing big data from users in low- and middle-income countries, and IBM's project to optimise Bangalore's water system. The project also involved participant observation over the entire two years of the research at international events linked to the International Data Responsibility Group, in order to understand the development of this new constellation of actors within D4D, their objectives and their perceptions of related ethical challenges.

The D4D project has done groundbreaking work on the issue of ethics in the Data for Development field. It has linked to international networks of scholars, practitioners and corporations working in the field, and has both helped to define, and to discuss, ethical questions that are new to the field of data analytics. This success has been reflected in invitations to present the research in high-profile public forums such as Oxford University and Vodafone's Brussels data policy forum, as well as targeted sectoral locations such as data science research groups across the EU. It has also created links with scholars and practitioners in Sub-Saharan Africa, India and Latin America, and with activist organisations such as Privacy International.

The research has also produced international and multidisciplinary discussions on the notion of group privacy, a problem arising particularly from interventions in developing countries using the new digital data sources becoming available through the use of social media, mobile phones and other connected devices. This discussion has resulted in several conference presentations (CPDP, Oxford University and elsewhere), and the (forthcoming) publication of a book. Comprising an interdisciplinary group of scholars, the book offers a discussion of group privacy from the perspectives of philosophy, development practice and law.

The project has resulted in the publication of seven peer-reviewed articles in international journals, three book chapters and more than 20 international presentations and discussions. Specifically, two academic papers on the case studies are forthcoming in international journals.¹ An example of an output receiving wide use is a network mapping of the international Responsible Data discussion over the

¹ Taylor L. (2016) The ethics of big data as a public good: which public? Whose good? *Phil. Trans. R. Soc. A* 374:20160126.

<http://dx.doi.org/10.1098/rsta.2016.0126>

and Taylor, L. and Richter, C. (forthcoming) The power of smart solutions: knowledge, citizenship and the datafication of Bangalore's water supply. *Television and New Media*.

period 2014-2016 see below), which is soon to be published and is being used by corporate and activist actors to understand and influence the field.

The work as a whole has resulted in three main impacts: 1) a growing discussion amongs the academic communities in digital geographies, development studies, critical data studies and data ethics on the issues raised by the use of big data in development and humanitarian response; 2) the contribution of findings from the project to various consultative processes on the national and international level; and 3) feedback to and discussions with several European technology corporations on issues to do with data ethics and collaboration with the international development field.

Responsible Data (D4D) discussion participants, 2014-2016

