

# Participatory Data Ethics

## A Practical Approach

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### ABSTRACT

In public administration, more and more processes are being digitised and data is being used to collect information, determine the probability of events, or directly support the work of civil servants through automated decision-making. This practice offers many opportunities, but also raises a number of issues. The complexity and opacity of datasets, analysis processes, models or proprietary software creates black boxes in public management and calls for checks and balances. Possible harms inflicted through automated decision-making processes, infringement on privacy, autonomy, and the right to information need to be prevented; proportionality, function creep and the competence and capacity of city employees to adequately apply these novel methods are called into question. While there is a lively discourse emphasizing the need for ethics in AI and data practices, many of the available guidelines fall short in providing an applicable framework for responsible data practices. The Utrecht Data School has developed a deliberately dialogic and participatory approach to data ethics. In this paper we show how our tools enable dialogue between different participants in a data or AI project and give concrete examples of the use of our Data Ethics Decision Aid (DEDA) in municipal data and digitisation projects. We argue that participatory research practices for investigating datafication and algorithmization are very much connected to participatory data ethics.

### KEYWORDS

Data ethics, value-sensitive design, action research, transdisciplinary methods

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### 1 Introduction

With the increasing use of data analytics and AI in corporate contexts and in public management, calls for accountability and checks and balances have similarly risen. In particular, the coverage of disputable algorithms and data projects [O'Neill 2016, Eubanks, 2018] created an awareness for the need of responsible data practices [Zwitter 2014]. The emerging field of critical data studies scrutinizes the alleged objectivity of data and models, and the use of algorithms [Iliades & Russo 2016]. Data ethics or data justice have been emphasized as a way of balancing values, as well as considering possible harms and other undesirable effects[e.g. Taylor 2017; Dencik et al. 2019]. In the past four years, a plethora of guidelines, manifestos, and frameworks for ethical AI and data practices have been published [Algorithm Watch 2019]. Most of them define a number of key values which developers should adhere to when building algorithmic systems, and policy makers should guard throughout their implementation. However, many of these guidelines fall short in a) providing support for practical application and value-sensitive design, b) considering the present values of the context where algorithmic systems are developed or deployed, and c) encouraging participative processes of deliberation, design development and accountability [Noorman, Taylor 2020; Franzke, Muis, Schäfer 2021].

Our approach differs. Over the past years, we developed a number of tools, processes and educational programmes that a) structurally consider the values present in the context where data projects and AI projects are developed or implemented, b) facilitate dialogic processes for identifying ethical pitfalls, and c) provide opportunities to respond to these challenges through design choices and constituting accountability.

The Utrecht Data School, a research group at Utrecht University, investigates how datafication and algorithmization change citizenship and democracy. This research takes place as participatory observation within (local) government organisations [Siffels et al 2021]. We also aim to make data ethics applicable, and to raise awareness for ethical challenges in data and AI projects. With the help of our impact assessment tool the Data Ethics Decision Aid (DEDA), workshop participants can learn to apply

data ethics in a concrete way.<sup>1</sup> DEDA is a process for engaging different participants, gathering perspectives, and deliberating design and policy decisions, and documenting it. DEDA is used in over 30 municipalities, ministries, the police academy and other educational organisations in the Netherlands [Franzke, Muis, Schäfer 2021]. In addition, we developed a number of other tools and educational programmes to support the development of digital-ethical literacies, and the informed decision-making concerning data and AI projects in (local) government contexts.

## 2 Dialogic Deliberation of Data and AI Projects

In the city of Zaanstad, weather data, satellite images, information about ground water levels and subsidence, were used to predict which houses with wooden foundations would need maintenance. In the municipality of Amersfoort, an algorithm calculates where the road surface might be damaged by root pressure from surrounding trees. But what if data collection and analysis, or even decision-making based on it, violate values and harm individual citizens, discriminate against vulnerable demographics, stifle autonomy, or infringe on dignity? How can we protect the values that are essential for an open society and our democracy? This is precisely where data ethics comes in. Data ethics

studies and evaluates moral problems related to data (including generation, recording, curation, processing, dissemination, sharing and use), algorithms (including artificial intelligence, artificial agents, machine learning and robots) and corresponding practices (including responsible innovation, programming, hacking and professional codes), in order to formulate and support morally good solutions [Floridi, Taddeo 2016].

It evaluates to what extent our handling of data transports and touches values. It does not ask what we are allowed to do with the data, but what we want to do with it. In all data projects, values such as privacy, autonomy, equality, and transparency play a role and these values must be weighed in order of importance. Data ethics looks at AI, data, or digitisation projects through the lens of a value system. This way, the whole project can be evaluated in its different aspects and specific context; and concrete solutions can be developed to avoid undesirable effects. Numerous manifestos and guidelines considering the application of artificial intelligence and the use of data are accessible. The organisation Algorithm Watch has recorded and categorised 173 such guidelines. Many of these guidelines articulate a set of core values to guide the use of data and the development of AI. The best known is that of the High Level Expert Group on AI, which prescribes seven core values for consideration [HLEG AI 2019]. Defining key principles is relevant for embedding data and AI projects within the larger context of the commonly shared value-system in our democracies. On this level, the general values can be adhered to but value issues will occur on a more detailed and fine-grained layer of political organisation. In addition, a set of key values often remains too abstract for application in concrete projects and tangible processes. While all public management organisations can adhere to the general

principles, values still differ from one municipality to the other. A project for poverty prevention used in a social-democratic municipality might be very different from a similar project implemented in a liberal municipality, and values for algorithmic traffic management might be stricter in municipalities with strong environmentalists' presence in the city council. Local norms and values, often represented in the various parties of city council, must be considered as well. But also, the values of the organisation or the context in which data are collected, processed and used for algorithmic systems must be made explicit. In order to become aware of these value issues, DEDA can help.

### 2.1 Individual Case Deliberation with DEDA

Facilitating a dialogic process, DEDA makes the values of the organisation and the values that affect a data or AI project explicit. This reflection process connects staff members from different departments with stakeholders and/or citizens. The process is designed in a way that enables different perspectives to be considered, and stimulates a problem-solving approach to ethical issues either through design choices or through installing the requisite checks and balances. Through including the different participants, their subject-specific expertise and distinct perspectives, the process is inherently participatory. Furthermore, the process increases data-ethical awareness; participants develop an understanding for problematic aspects of collecting data, analysing and using it, or implementing algorithmic systems. But they also develop an eye for understanding its opportunities, and can come up with design choices or policy decisions that strengthen public values and expand citizens' agency. The most effective aspect of this approach, however, is that values can be considered when developing data or AI projects. The process leads to responsible design and policy decisions, and its documentation allows critical audiences (journalists, citizens, or council members) to inspect and revisit the dialogic process. This ethical and participatory impact assessment complements the usual data protection impact assessments. DEDA does not ask what is allowed in an AI, data or digitisation project, but asks what is socially desirable and responsible. The process itself is reflexive and participatory (see figure 1). Because of COVID regulations, there is also a remote version for online DEDA assessments. In both cases, moderators help the participants go through the various questions, engage in deliberation and decision-making, and document the process.

Using DEDA, a regional government in the Netherlands decided not to capture data through WiFi tracking that monitors visitor numbers in recreational areas. In order to comply with Corona-rules, they decided to estimate visitor numbers by counting the number of cars and bicycles with sensors. Those merely count the number of vehicles and do not register other information. In another case - the prediction of so-called problem addresses - an ethical reflection led to including members of municipal neighborhood teams, local police and social welfare workers to review the addresses the model had predicted. The subject-specific expertise of these 'street-level bureaucrats' led to a drastic reduction (almost

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<sup>1</sup> DEDA was developed in collaboration with the municipality of Utrecht by Aline Franzke, Mirko Tobias Schäfer and Iris Muis. Utrecht Data School, Utrecht University: <https://dataschool.nl/de/deda/>

70%) of target addresses, resulting in 20 remaining addresses of which only one was a false positive.<sup>2</sup>



Figure 1: Impact assessment using DEDA. Photograph by Utrecht Data School

## 2.2 Making Data and AI projects a public issue

Recently, the Dutch Institute for technology impact assessment, the Rathenau Instituut, found that elected representatives are still insufficiently participating in the deliberation on digitization projects (Das, Karstens, Diederens 2020). Many local councilors do not recognise data and digitization projects as political issues, but merely as technical processes where IT specialists or data scientists are supposed to make decisions. There is a lack of technical competence, but above all a lack of awareness of the socially transformative consequences of digitization. However, elected representatives are essential for voicing different points of views, engaging in deliberation and policy making. In order to offer these stakeholders more opportunities to come up with informed opinions, the Utrecht Data School has developed another tool. The Digital Advisor is a kind of 'cheat sheet' to offer councilors possible critical questions about a data or digitisation project.<sup>3</sup> The questions lead to a thorough collection of information regarding the dossier at hand. In the following step, users can learn about possible policy issues arising from the proposed project. This provides the basis to finally make a value judgement and take an informed decision regarding the project. The Digital Advisor was developed in cooperation with council members and the

<sup>2</sup> Besides examples from public administration, we have also gathered experience with companies. An important difference here is that the values are much less explicitly present and employees are also less intrinsically value-oriented with regard to the company's goals and activities. Profit and turnover are often in the foreground, followed by quality of products or services and customer satisfaction.

City of Almere. We hope that it will stimulate councilmembers to reflect on the political implications of digitization and data projects. In conversation with constituents and fellow party members they need to consider how digital technology shapes society, and to formulate political perspectives. With reference to Bruno Latour's notion of "making things public", we can argue that the active involvement of council members or members of parliament makes design and policy choices for algorithms and data a public issue [Latour 2005]. In addition, the media -as the fourth estate- need to weigh in on a very much needed public debate on how these technologies are supposed to shape our society.

## 3 Participatory Research and Participatory Data Ethics

A participatory approach to data ethics acknowledges that responsible data practices cannot be achieved through merely prescribing sets of core values, providing check-lists or even delegating responsibility to certification processes or audits. While these might be useful, they neglect the inclusion of the various stakeholders and their different perspectives, and are insufficient in responding to the volatility of changing contexts, data, and self-learning algorithms [see also Franzke, Muis, Schäfer 2021]. A participatory approach addresses the stakeholders on various levels of public management connecting policy makers and representatives to city employees, third parties, citizens, and media and advocacy groups [see e.g. Friedeman, Khan, Borning 2008; Simon 2016]. Through cooperating directly with public management organisations, we can not only raise awareness for more inclusive approaches to reviewing data projects, or investigate how government organisations respond to datafication and algorithmization, but we can even intervene or take part in shaping an understanding for digital good governance [Van Es, Schäfer 2017; Meijer, Schäfer, Branderhorst 2019].

Here our practice and our argument for participatory data ethics overlaps with earlier notions of participatory ethics: "Central to participatory ethics, too, is a presumption of engaged scholarship, of doing research informed by an 'ethic of care' in its most profound sense as a deep respect for relationships and humanity" [Cahill, Sultana, Pain 2007]. Participatory research practices are therefore inseparably

<sup>3</sup> The digital adviser (De digitale raadgever) is developed in collaboration with the municipality of Almere and Utrecht University; the Dutch version can be found online here: <https://dataschool.nl/samenwerken/datawerkplaats/producten-en-tools/de-digitale-raadgever-concept/>

connected to socially engaged scholarship [see also Manzo, Brightbill 2007]. It also stimulates a mutual knowledge transfer between the academy and societal sectors. Not only are our researchers often found as lecturers or DEDA trainers at government organisations, but their employees also contribute to joint research projects or join courses at the university to expand their skill sets. In addition, researchers develop numerous tools and processes for various organisations in public administration, review their practices, and inform policy making [e.g. Maijer, Schäfer, Branderhorst 2019; Van den Berg et al. 2021].

We do not claim that this practice is new, we merely apply participatory, transdisciplinary research practices to inquire the social impact of datafication and algorithmization. Our participatory approach to data ethics and the development of general digital-ethical literacies is a result of this work.

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What we call participatory ethics here, grew out of a joint effort of investigating the impact of datafication and algorithmisation on citizenship and democracy. At Utrecht Data School, we developed distinct methods to access organisations and domains where this transformation manifests. This work is very much a team effort. The authors therefore do not claim the practice, the research output or the general approach to participatory and inclusive ways of holding data and algorithms accountable to be their original contribution. We merely summarize these practices here to make a statement for socially engaged and practice-based research that enables participatory ethics. We acknowledge the participation and contributions of our colleagues who have worked at or are members of the Utrecht Data School, or have cooperated with us in research projects. Their insights to accountability, ethics and governance in the datafied society is essential for this work. Participatory research is not possible without external partners. We are grateful for their trust and cooperation.

## REFERENCES

- Algorithm Watch. 2019. AI Ethics Guidelines Global Inventory. Algorithm Watch, online: <https://algorithmwatch.org/en/ai-ethics-guidelines-global-inventory/>
- Berg, David van den, Mirko Tobias Schäfer, Iris Muis, Lisa de Graaf, Roos Banning, and Sander Klein. 2021. Op weg naar de datagedreven gemeente. Randvoorwaarden voor verantwoord datagedreven bestuur. Onderzoeksrapport voor VNG, Vereniging Nederlandse Gemeenten.
- Cahill, Caitlin, Farhana Sultana, and Rachel Pain. Participatory ethics. 2007. Politics, practices, institutions. ACME: An International Journal for Critical Geographies 6.3, pp. 304-318.
- Das, Djurre; Bart Karstens, Paul Diederren. 2020. Raad weten met digitalisering. Hoe de gemeenteraad kan sturen op de maatschappelijke impact van digitale technologie. Rathenau Instituut. Online: <https://www.rathenau.nl/nl/kennisgedreven-democratie/raad-weten-met-digitalisering>
- Lina Dencik, Arne Hintz, Joanna Redden & Emiliano Treré. 2019. Exploring Data Justice: Conceptions, Applications and Directions, Information,

- Communication & Society, 22:7, 873-881, DOI: 10.1080/1369118X.2019.1606268
- Van Es, Karin and Mirko Tobias Schäfer. 2017. New Brave World. Introduction to The Datafied Society. In: Schäfer, Mirko Tobias and Karin Van Es. The Datafied Society. Studying Culture through Data. Amsterdam: Amsterdam University Press, 2017:13-24.
- Eubanks, Virginia. Automating Inequality: How high-tech tools profile, police, and punish the poor. St. Martin's Press, 2018.
- Florida, Luciano and Mariarosaria Taddeo. 2016. What is Data Ethics? Philosophical Transactions of the Royal Society A 374:20160360, <http://dx.doi.org/10.1098/rsta.2016.0360>
- Franzke, Aline, Mirko Tobias Schäfer, Iris Muis. 2021. Data Ethics Decision Aid (DEDA): A Dialogical framework for ethical inquiry of AI and data projects in the Netherlands. Ethics & Information Technology. 27 January 2021, <https://doi.org/10.1007/s10676-020-09577-5>
- Friedman, Batya., peter H. Kahn and Alan Borning. 2008. Value sensitive design and information systems. In Doorn, Neelke, Daan Schuurbiers, Ibo van de Poel and Michael E. Gorman (eds.) The handbook of information and computer ethics (pp. 69–101). Hoboken, NJ: John Wiley & Sons.
- High Level Expert Group on AI. 2019. Ethics guidelines for trustworthy AI. European Commission. Online: <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai>
- Iliadis, Andrew and Federica Russo. 2016. Critical Data Studies: An introduction. Big Data & Society, 3(2), 205395171667423. <https://doi.org/10.1177/2053951716674238>
- Latour, Bruno. 2005. From Realpolitik to Dingpolitik. In Bruno Latour and Peter Weibel (eds.) Making Things Public: Atmospheres of Democracy. Cambridge, MA. MIT Press, pp. 14-44.
- Meijer, Albert, Mirko Tobias Schäfer, Martiene Branderhorst. 2019: Principes voor goed lokaal bestuur in de digitale samenleving. Een aanzet tot een normatief kader. In: Bestuurswetenschappen Vol. 73, Nr. 4, pp. 8-23.
- Manzo, Lynne C. and Nathan Brightbill. 2007. Toward a participatory ethics. Participatory action research approaches and methods. Routledge, 2007. 59-66.
- Noorman, Merel and Linnet Taylor. 2020. Tada's blind spots. Opinion article on Tada. Online: <https://tada.city/en/nieuws/opinion-tadas-blind-spots/>
- Taylor, Linnet. 2017. What is data justice? The case for connecting digital rights and freedoms globally. Big Data & Society, 4(2), 2053951717736335.
- O'Neil, Cathy. 2016. Weapons of Math Destruction: How big data increases inequality and threatens democracy. Crown, 2016.
- Siffels, Lotje, David van den Berg, Mirko Tobias Schäfer, Iris Muis. 2021. Public Values and Technological Change: Mapping how municipalities grapple with data ethics. In Hepp, Andreas, Juliane Jarke and Leif Kramp (eds). The Ambivalences of Data Power: New Perspectives in Critical Data Studies. Palgrave, in print
- Simon, Judith. (2016). Values in Design. In Handbuch Medien-und Informationsethik (pp. 357–364). Stuttgart: JB Metzler.
- Zwitter, Andrej. 2014. Big Data Ethics. Big Data & Society 1.2 (2014): 2053951714559253.