

# Big Data in Government: Discursive Proto-Institutionalisation of Data-Driven Governance in European Metropolitan Governments

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Big Data Analytics is considered to be one of the most important technological innovation for government and public administration in the last decades (Pollitt 2014), as government is predominantly a knowledge-based business (Lenk & Wengelowski 2004). Weber (1922) stated that "Bureaucratic administration means fundamentally domination through knowledge", and Big Data Analytics in conjunction with cyber-physical systems stands to multiply that knowledge.

The dominant framing of Big Data in government, as spread by highly influential management consultancies and technology providers, propagates the recently coined ideology of „dataism“ (Van Dijck 2014), the belief that, given enough data, rational analysis can solve any problem. However, this idea has hardly been brought about by modern database technologies. The underlying meta-narrative of rationalism, modernism, and positivism can be traced back to the age of enlightenment (Porter 1996) and could e.g. be well observed in public policy and administration during the planning euphoria of the 1960s and 1970s, when the "ideal of replacing politics with knowledge" (Torgerson 1986) reigned supreme.

However, Big Data is hardly a definitive concept, and even less so in the perception of government practitioners. Like a typical management fashion (Abrahamson 1996), the term is ubiquitous, but its understandings diverse. Instead of a set of concrete hard- and softwares, I regard Big Data as a highly interpretively flexible (Bijker et al. 1987) socio-technical assemblage (Ruppert et al. 2015) that has to be made sense of in every organisational context. This sensemaking happens through discursive struggles over shared narratives that are told about Big Data for government within an administration. Thus, a central question is whether the global discourse about Big Data in government, and along with it the ideology of "dataism", is reproduced in each local context, or if local sensemaking diverges to a degree that there is no globally coherent idea and reform trajectory of "Big Data in government".

## *Theoretical framework*

The dissertation is based on a neo-institutionalist framework, specifically approaches such as discursive institutionalism (Schmidt 2012) and proto-institutionalisation (Zietsma & McKnight 2009). Discursive institutionalism highlights the role of discourse, ideas, and narratives in institutional processes, as institutions are understood as stabilized discourses. Proto-institutionalization takes up this perspective and focuses on the discursive making of new institutions, i.e. the establishment of generally accepted shared meanings. Proto-institutions are thus different meanings – in my case of the socio-technology of Big Data in government – that struggle for the status as dominant shared meaning in an organization or organizational field. That such meanings are typically transported in narratives has long been established in neo-institutionalist research (Strang & Meyer 1993), and especially in translation studies (Sahlin & Wedlin 2008). The related approach of institutional work (Lawrence & Suddaby 2006) links these discourses to actors and their struggles, e.g. outlining common rhetorical strategies for the creation, maintenance, and destruction of institutions.

As technology is still underconceptualized in new institutionalism, I also draw on approaches like the Social Construction of Technology (Bijker et al. 1987) and the sociology of expectations in technology (Borup et al. 2006) to conceptualize the link between narratives and the institutionalization of socio-technical practices. In contrast to technologically determinist approaches that hold that technology

invariably shapes the social context it is employed in, socially determinist concepts like the Social Construction of Technology stress that even material technologies have to be interpreted anew in each social context. The sociology of expectations in technology stresses that the expectations raised by stories told about what a new technology can or will be able to do are central to how people perceive these technologies and what they want to use them for, therefore in turn influencing technology development as developers try to make good on the expectations. However, in contrast to most approaches from the sociology of technology, I am not how technologies are created but rather how they are interpreted by their users.

To sum it up, I frame my dissertation as a study of institutional creation work with a focus on the theorization (Strang & Meyer 1993) of Big Data in government as a new socio-technical practice and its translation and editing (Sahlin & Wedlin 2008) in different institutional contexts.

### *Research Design*

In a most similar systems design that purposely varies administrative traditions, I compare how Big Data for government is discursively constructed in the city administrations of Vienna, Manchester and Amsterdam. The three cities are largely similar in terms of population, GDP, and e-government development. However, in terms of their administrative traditions, Vienna is still characterized as a largely Weberian rational bureaucracy (Hammerschmid & Meyer 2003), while British local governments generally follow the paradigm of New Public Management (Sanderson 2001). The Netherlands are often seen as an intermediary between those two, with a tendency towards a Scandinavian emphasis on participation and transparency.

	<i>Vienna</i>	<i>Amsterdam</i>	<i>Manchester</i>	<i>Source/Year</i>
<i>Population</i>	2,68 Mio	2,42 Mio	2,71 Mio	<i>Eurostat 2013</i>
<i>GDP per capita</i>	42,049 €	47,465 €	27,407 €	<i>Eurostat 2013</i>
<i>E-Gov Development Rank</i>	20	5	8	<i>EGDI 2014<sup>1</sup></i>
<i>E-Gov Development Score</i>	0,7912	0,8897	0,8695	<i>EGDI 2014</i>
<i>Innovation Cities Rang (EU)</i>	3	5	14	<i>ICI 2014<sup>2</sup></i>
<i>Administrative Culture</i>	Rechtstaat	Originally very legalistic, but now pluralistic/consensual	Public Interest	(Pollitt & Bouckaert 2011)
<i>Type of Local Government System</i>	North Middle European	North Middle European	Anglo	(Kuhlmann & Wollmann 2013)

To reconstruct the discourse, I conduct semi-structured, problem-centered interviews with government officers and gather internal and official documents related to Big Data in the city administration. This data is then analysed with different qualitative content analysis methods: With inductive coding following the Gioia method (Gioia et al. 2012), I identify the different narratives or frames of Big Data in the city administrations (Benford & Snow 2000) and work out similarities and differences among their understandings as well as the global narrative of Big Data in government as propagated by management consultancies and technology companies. With more deductive coding, I seek to reveal the rhetorical strategies of the involved institutional work (Suddaby & Greenwood 2005) that are employed by the city governments. For instance, is Big Data portrayed as a logical continuation of the administrations proud traditions or is it framed as something new that marks a break with old, ineffective habits? Are certain aspects of Big Data highlighted, ignored, or reinterpreted to allow a better fit to the pre-existing narratives? Finally, a vocabulary analysis of the

<sup>1</sup> (United Nations Department of Economic and Social Affairs 2014)

<sup>2</sup> <http://www.innovation-cities.com/innovation-cities-europe-index-2014/8897>

data assesses the adherence to different public sector reform paradigms in the discursive construction of Big Data in the city governments, essentially answering the question whether we see a push towards convergence or divergence with the rise of Big Data in these city governments.

### *Outlook*

This project explores the realities of the currently hotly debated “data-driven governance” (Esty & Rushing 2007), which seems poised to become the next management fashion (Abrahamson 1996) to sweep across public administrations. As much of the academic literature indulges in dys- and utopian speculation, revisiting the same handful of illustrative case studies over and over again, I seek to ground the debate with empirical observations of the involved frames and narratives in actual public administrations. On a more abstract level, my dissertation speaks to the convergence/divergence debate about public sector reform paradigms, particularly the long-heralded Digital Era Governance (Dunleavy et al. 2006) which argues that the integration of information technology in government will lead to a specific organizational setup. Further, the dissertation aspires to contribute to the conceptualization of technology in new institutionalism, which has hitherto been very incoherent. By focussing on the interpretation and sensemaking of technology rather than its material aspects

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