

## Big Data in Government:

# Discursive Proto-Institutionalization in European Metropolitan Governments

Basanta Thapa

13 September 2015  
COST LocRef PhD Training School Spetses

# What is Big Data?

## Volume



### Data at scale

Terabytes to  
petabytes of data

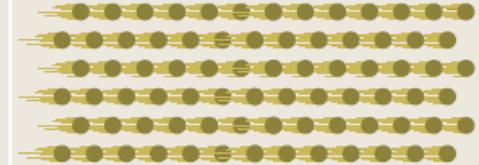
## Variety



### Data in many forms

Structured, unstructured,  
text, multimedia

## Velocity



### Data in motion

Analysis of streaming data  
to enable decisions within  
fractions of a second

## Veracity



### Data uncertainty

Managing the reliability and predictability  
of inherently imprecise data types

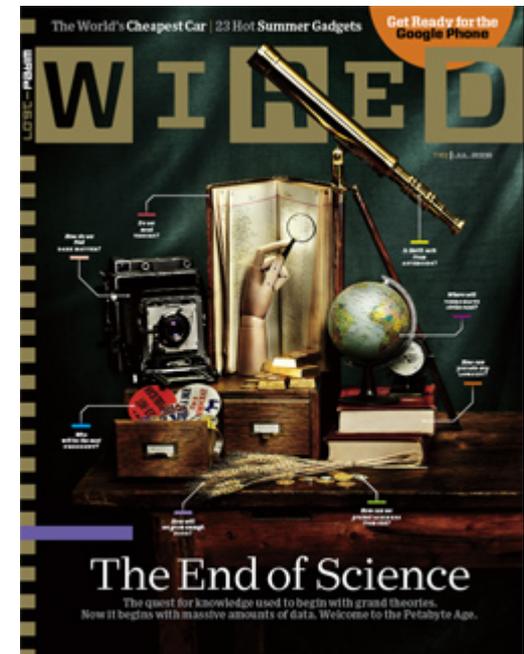
## The Promise of Big Data

“Out with every theory of human behavior, from linguistics to sociology. [...]

Who knows why people do what they do?

The point is they do it, and we can track and measure it with unprecedented fidelity.

With enough data, the numbers speak for themselves.”



## Big Data & Government?

- Government is a knowledge-based business (Weber 1922)
- massive interest in Big Data in government
- Big Data among most important technologies for the future of public administration (Pollitt 2014)
  - importance of information management: Porter(1996); Scott (1998)

## Empirical challenges

- Big Data only around since 2010/2011
- Big Data in government in an „embryonic stage“ (European Commission 2015)
- more or less random pilot projects scattered all over the world
- Governments in a „pre-evaluation phase“ (City of Vienna)

**Basic question of studying technology in public administration:**

*What is the effect of technological change  
on administrative change?*

(Pollitt 2011)

## Major views on the effects of Big Data in government

- „techno-utopianism“ vs. Big Brother surveillance dystopias

Two perspectives as in Hood (2008):

1. „Transformative visions“:  
paradigm shift towards „digital-era governance“
2. „Dynamic conservatism“:  
technical modernization as in „faster, better, cheaper“

JPART 16:467–494

# **New Public Management Is Dead—Long Live Digital-Era Governance**

***Patrick Dunleavy***

*London School of Economics and Political Science*

***Helen Margetts***

*Oxford Internet Institute, Oxford University*

***Simon Bastow***

***Jane Tinkler***

*London School of Economics and Political Science*

## Digital-era Governance

- traditional e-government only digitalization of existing business processes
- „infocracy“ & „iGovernment“: new way of thinking and decision-making in government due to systematic linking and analysis of governmental data
- emergent public sector reform paradigm

## Major views on the effects of Big Data in government

- „techno-utopianism“ vs. Big Brother surveillance dystopias

Two perspectives as in Hood (2008):

1. „Transformative visions“:  
paradigm shift towards „digital-era governance“
2. „Dynamic conservatism“:  
technical modernization as in „faster, better, cheaper“

## *How to approach Big Data in government?*

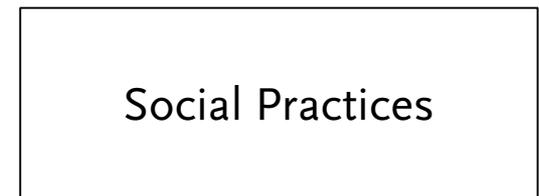
*Technological determinism*



*Socio-technical systems*



*Social determinism*



## Big Data as a „socio-technical assemblage“. (Ruppert et al. 2015)

- combination of technical and social aspects
- typical for general-purpose technologies
- “...both socially constructed and society shaping.”  
(Bijker, Hughes, Pinch 1989)
- emancipation of the Big Data label from technology
- technologically-enabled social practice

## Research objectives

1. Understand how public administrations make sense of or construct Big Data Analytics in government.
2. Observe (systematic) convergence or divergence.

## Theoretical framework

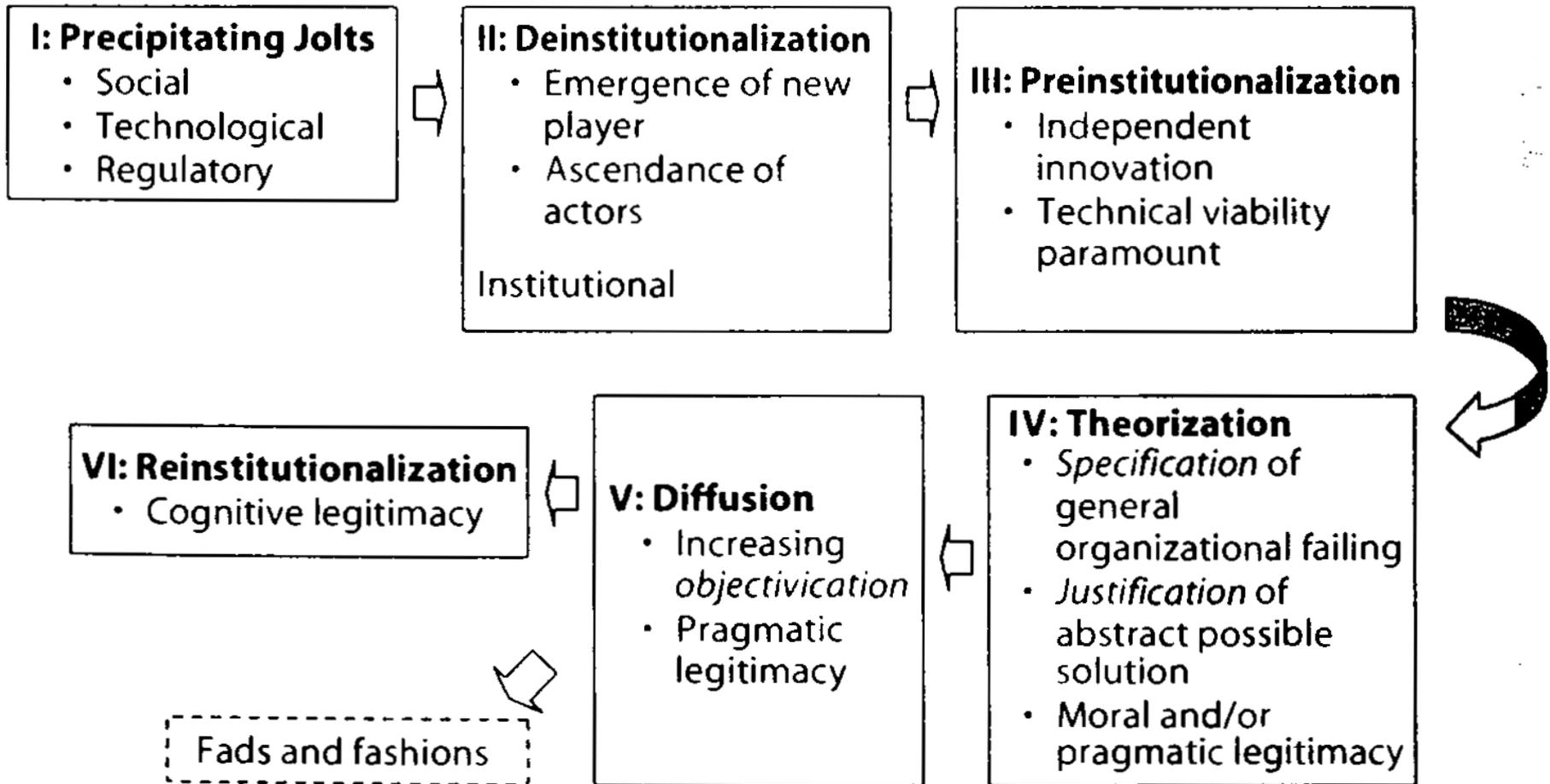
- not theories from e-government research
- Neo-institutionalism
  - logic of appropriateness
  - institutionalization
  - convergence/divergence
  - possibility to model socio-technical systems

## Proto-Institutions

- “proto-institutions are candidates for institutionalization”  
(Zietsma & McKnight 2009)
- “new practices, rules, and technologies” which “may become new institutions if they diffuse sufficiently”  
(Lawrence, Hardy & Phillips 2002)
- discursive process of establishing shared meanings for emergent social practices

## Institutional Work

- bringing actors back in (beyond institutional entrepreneurs)
  - driven by interests and systems of meaning
- Non-linear institutional processes:
  - creating institutions
  - maintaining institutions
  - demolishing institutions



Greenwood, Suddaby, Hinings (2002)

## Theorization (Strang & Meyer 1993)

- What are the features of the practice?
- What problems can it solve?
- Who are appropriate users?
- What are the underlying cause-effect relations?

## Management & IT fashions (Abrahamsson 1996; Wang 2010)

- new practices are globally defined by management gurus
  - theorization takes place at a global level
- > convergence

## Translation & Editing (Czarniawska & Joerges 1996)

- existing local institutional arrangements shape new practices
  - “Translation refers to the notion that ideas change when they travel from one context to another” (Boxenbaum 2009)
  - re-theorized in each institutional context
- > divergence

## Research questions

1. *How is Big Data Analytics theorized in public administration?*  
What clusters of theorization exist? Who are the key actors?
2. *How is the proto-institution of Big Data Analytics in government edited and translated?*  
Which existing local and global institutions and actors' interests do the theorizations link to? What is the influence contextual factors?
3. *What are the patterns of theorization?*  
What is the influence of institutional legacies and contextual factors?  
Is there institutional divergence or convergence?

## Research design

- interpretivist approach
- exploratory comparative multiple case study
- qualitative content analysis to analyze the discursive dynamics

## Case Selection

- metropolitan governments as pioneers of digital government
  1. Vienna, Austria
  2. Amsterdam, Netherlands
  3. London, United Kingdom
- comparable as ‚Northern‘ EU member states with renowned Smart City concepts
- purposefully vary in administrative traditions

## Data Collection

1. all accessible documents concerning Big Data in city governments (e.g. meeting minutes, policy documents, evaluation reports, press statements)
2. 12-20 interviews with involved actors per city government
3. publications in specialized media identified as relevant by interviewees and from documents

## Data analysis

- Discourse analytic framework by Hajer (2006)
- conventional qualitative content analysis (open coding)
- reconstruct discourse, establish narrative
- co-occurrence analysis of narratives, metaphors, argumentative patterns and actors, administrative traditions, policy fields, types of task, etc.

Thanks!

## References

- Abrahamson, E. (1996). Management fashion. *Academy of Management Review*, 21(1), 254–285.
- Anderson, C. (2008). The End of Theory: The Data Deluge Makes the Scientific Method Obsolete. *Wired Magazine*.
- Czarniawska, B., & Joerges, B. (1996). Travels of ideas. In B. Czarniawska & G. Sevón (Eds.), *Translating organizational change*, 12–48.
- European Commission. (2015). *Future-proofing eGovernment for a Digital Single Market Future-proofing eGovernment for a Digital Single Market*.
- Greenwood, R., Suddaby, R., & Hinings, C. R. (2002). Theorizing Change: the Role of Professional Associations in the Transformation of Institutionalized Fields, 45(1), 58–80.
- Hajer, M. a. (2006). Doing discourse analysis: coalitions, practices, meaning. *Words Matter in Policy and Planning. Discourse Theory and Method in the Social Sciences*.
- Hood, C. (2008). The Tools of Government in the Information Age. In M. Moran, M. Rein, & R. E. Goodin (Eds.), *The Oxford Handbook of Public Policy*, 469–481.
- Lawrence, T. B., Hardy, C., & Phillips, N. (2002). Institutional Effects of Interorganizational Collaborations: The Emergence of Proto-Institutions. *Academy of Management Journal*, 45(1), 281–290.
- Pollitt, C. (2011). Mainstreaming technological change in the study of public management. *Public Policy and Administration*, 26(4), 377–397.
- Porter, T. M. (1996). *Trust in numbers: the pursuit of objectivity in science and public life*. Princeton, N.J.: Princeton Univ.Press.
- Ruppert, E., Harvey, P., Lury, C., Mackenzie, A., McNally, R., Baker, A. S., ... Lewis, C. (2015). *Socialising Big Data: From concept to practice*.
- Scott, J. C. (1998). *Seeing Like a State*. Yale University Press.
- Strang, D., & Meyer, J. W. (1993). Institutional conditions for diffusion. *Theory and Society*, 22(4), 487–511.
- Wang, P. (2010). Chasing the Hottest IT: Effects of Information Technology Fashion on Organizations. *MIS Quarterly*, 34(1), 63–85.
- Weber, M. (1922). *Wirtschaft und Gesellschaft. Grundriss der Sozialökonomik*
- Zietsma, C., & McKnight, B. (2009). Building the iron cage: institutional creation work in the context of. In T. B. Lawrence, R. Suddaby, & B. Leca (Eds.), *Institutional work: Actors and agency in institutional studies of organizations* (pp. 143–177).

## Contact

Basanta E.P. Thapa, MA  
PhD Fellow

DFG Research Training Group „Wicked Problems, Contested Administrations“  
Faculty of Economic and Social Sciences  
University of Potsdam

+49 177 7790594  
thapa@uni-potsdam.de

[www.wipcad-potsdam.de](http://www.wipcad-potsdam.de)