Book Reviews

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1   **Governance in the Information Era Theory: Practice of Policy Informatics**
by: Erik W. Johnston (Editor)
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Policy informatics is addressing governance challenges and their consequences, which span the seeming inability of governments to solve complex problems and the disaffection of people from their governments. Policy informatics seeks approaches that enable our governance systems to address increasingly complex challenges and to meet the rising expectations of people to be full participants in their communities. This book approaches these challenges by applying a combination of the latest American and European approaches in applying complex systems modelling, crowdsourcing, participatory platforms and citizen science to explore complex governance challenges in domains that include education, environment and health.

List of chapters and appendices

Foreword, by Rick Shangraw

Introduction

- Chapter 1. Conceptualising policy informatics, by Erik W. Johnston

Part 1: Basics

- Chapter 2. The value and limits of government information resources for policy informatics, by Sharon S. Dawes and Natalie C. Helbig.

- Chapter 3. Evidence for policy inquiry, by Anand Desai and Kristin Harlow.

- Chapter 4. Visualisation meets policy-making: visual traditions, policy complexity, strategic investments, by Evert Lindquist.

Part 2: Analysis

- Chapter 5. The endogenous point of view in policy informatics, by George P. Richardson.

- Chapter 6. Model-based policy design that takes implementation seriously, by I. David Wheat.

- Chapter 7. Public-private partnerships: a study of risk allocation design envelopes, by David N. Ford, Ivan Damnjanovic and Scott T. Johnson.

- Chapter 8. Policy informatics with small system dynamics models: how small models can help the public policy process, by Navid Ghaffarzadegan, John Lyneis and George P. Richardson.

- Chapter 9. Quantitative modelling of violent group behaviour using open-source intelligence, by Christopher Bronk and Derek Ruths.

- Chapter 10. Making a difference, by Kimberly M. Thompson

Part 3: Administration

- Chapter 11. Governance informatics: using computer simulation models to deepen situational awareness and governance design considerations, by Christopher Koliba and Asim Zia.

- Chapter 12. Complexity and educational policy informatics: exploring unanticipated consequences and unrealised opportunities of policy decisions, by Nora H. Sabelli, William R. Penuel, and Britte H. Cheng.

- Chapter 13. Policy modelling of large-scale social systems: lessons from the SKIN Model of innovation, by Petra Ahrweiler, Andreas Pyka and Nigel Gilbert.

- Chapter 14. Lend me your expertise: citizen sourcing advice to government, by William H. Dutton.

Part 4: Governance

- Chapter 15. Synthetic information environments for policy informatics: a distributed cognition perspective, by Christopher L. Barrett, Stephen Eubank, Achla Marathe, Madhav Marathe and Samarth Swarup.

- Chapter 16. Participatory simulation as a tool of policy informatics: definitions, literature review and research directions, by Gerard P. Learmonth, Sr. and Jeffrey Plank.

- Chapter 17. Action brokering for civic engagement: a case study of ACTion, by Alexandria Jes A. Koepfler, Derek L. Hansen, Paul T. Jaeger, John C. Bertot and Tracy Viselli.

- Chapter 18. Breaking the silos of silence: the importance of new forms of knowledge incubation for policy informatics, by Ines Mergel.

Part 5: Conclusion

- Chapter 19. The future of policy informatics, by Erik W. Johnston

Chapter contents

In the introductory chapter of the book, the editor defines the concept of policy informatics, and presents four key dimensions. He also gives an outline of the book's structure consisting of a series of essays that highlight various aspects (in terms of opportunities and challenges) of policy informatics, divided in four main parts.

In the first part of the book, entitled 'the Basics', the role of information technology in public policy formulation and analysis process is analysed. Chapter 2 discusses trends and limitations in collecting and analysing information during public policy and administration processes. A concrete framework so as to ensure the quality of information used in public decision-making is also presented. In Chapter 3, the authors explore the value of evidence-based decisions for policy-makers and administrators. In this respect, the consideration of the context in which public decisions are leveraged is highlighted as a legitimation factor. Concluding this discussion, Chapter 4 stresses the importance of computational technologies in visualising massive amounts of public information across a wide spectrum of forms, functions and origins. A framework connecting different visualisation techniques to various types of policy work is showcased. Key challenges in the adoption of such tools, in order to strengthen deliberation processes and the assessment of public policies, are also discussed.

In the second part of the book, entitled 'the Analysis', mechanisms of computational modelling is presented and discussed in more detail. Computational modelling techniques are analysed in Chapter 5, and linked to concepts such as dynamic thinking, stock-and-flow thinking and operational thinking. Chapter 6 elaborates on whether and how the use of computational-system modelling can help with identifying emergent patterns for solving public issues. Two cases of public health issues, flu epidemic and automobile pollution, are used as case studies. In Chapter 7, computational-system modelling is presented as a mechanism that can contribute to a better understanding of how a public-private partnership between a government agency and a private body can work efficiently, whereas in Chapter 8 public policy problems such as policy resistance and lack of consensus are used as examples for the potential of small system dynamics

models. In Chapter 9, the authors argue that open source technologies can contribute to qualitative models for violent groups behaviour. Finally, Chapter 10 presents a series of integrated models that are used to support high-level decisions concerning polio problems.

The authors of chapters in the third part of the book, entitled 'Administration', discuss the role of communication technology in involving divers groups of stakeholders in public policies. In this context, Chapter 11 explores the role of policy informatics as a situational awareness tool, whereas in Chapter 12 the authors try to answer why many well-intentioned education policy interventions have had limited success mainly due to policy resistance, also discussing the potential of computation and communication technologies in this respect. Chapter 13 presents a successful agent-based innovation policy model (SKIN), used in Europe over the last decade, that allows policy-makers to examine the contributions of specific research and innovation policies to societal goals is presented. This part of the book is concluded with Chapter 14, where crowdsourcing is presented as a mechanism that can capture the value of distributed intelligence so as to support public policy and regulation. Additionally, the concept of networks of citizens is introduced, the latter being treated as collaborative network organisations.

The fourth part of the book, entitled 'Governance', is dedicated to exploring the role of policy informatics in the development and implementation of government policies. In Chapter 15, the authors discuss the role of synthetic information environments in public health and pandemic preparedness planning and management. Analysing the case of a public health epidemic (the 2009 H1N1 outbreak), they argue that policy-making in this context can be abstracted to a cognitive problem. Chapter 16, on the other hand, explores the relationship between human behaviour and natural processes are explored. Argumentation is based on results of the UVa Bay Game, which has been played by hundreds of people called to take roles in watershed management. In Chapter 17, the ACTion Alexandria participatory platform is analysed as a real-life example. This online platform serves as a medium to encourage volunteerism, as well as achieve exchange of information and linkage between those in need and those willing to offer. Chapter 18, completing this part of the book, discusses how the role of social media can be explored from both a bottom-up and a top-down perspective in order to achieve active citizen engagement in policy making.

Last but not least, in the concluding chapter of the book, the editor presents an overview discussion of the ways in which policy informatics can be shaped in the future so as to meet policy challenges.

Significance for the state of research and practice

Broadly speaking, policy informatics addresses the challenges of how we can use old and new tools and techniques to convert data into useful and information and insightful knowledge for public policy issues. Diverse types of information, coupled with evolving analytical and computational tools, present important opportunities to address increasingly complex social, political and management problems (Helbig et al., 2012). However, these same technological and data-driven forces are at the same time significantly challenging traditional forms of governance, policy analysis and service design (Desouza and Yuan, 2011). As a result, currently the policy informatics field seems to be structured along two main research streams:

- focusing on digitisation of government agencies, functions and processes
- leveraging computational tools and techniques to understand the complexity of policy and managerial problems (Desai and Kim, 2015).

The book offers a comprehensive, evidence-based approach on applying mechanisms such as complex system modelling, crowdsourcing and participatory platforms in order to upgrade the way governments work and improve their relationship with citizens. The multidisciplinary backgrounds of the experts contributing as authors, coupled with the diverse examples presented and issues raised, all contribute to the success of this endeavour. Taking stock of concrete cases from different geopolitical contexts, the book explores how policy informatics can treat complex governance challenges in domains such as education, environment and health. The book chapters, clear in their focus and insightful in their findings, showcase remarkable interconnections between the potential of technology to transform public decision making and the public's capacity to co-create solutions.

While perusing this collective volume, the multidisciplinary character of policy informatics is brought to light together with foundations of this emerging field in information science, communication studies and policy analysis. On top of that, emerging government challenges in an effort to harness the potential of technology for social development are also presented and liaised to the policy informatics agenda.

At the same time, this book opens up new ways for research, highlighting the need for benchmarking mechanisms on the role and added value of policy informatics in different political contexts and different policy areas, so as to gain more knowledge on the designs and solutions that can work better. The use of simulated environments/outcomes and their eventual potential to influence policy decisions is an indicative case in this respect. According to Desai (2012), simulation models have long existed at the fringes of policy inquiry but are not yet considered an essential component of the policy analyst's toolkit. This situation, however, is likely to change, as improvements in computational power and software come along. Simulation is now easier to include in the standard repertoire of research tools available for discovery and decision support. To this end, further research can be conducted on how policy-makers perceive, and interact with, simulation environments for public policy issues.

Significance for managers and instructors

Policy informatics are considered as an analytical approach that comprises concepts, methods and processes for understanding complex public policy and management problems (Dawes and Janssen, 2013). They can tackle complex public issues in new and innovative ways so as to facilitate communication and achieve consensus-building among policy-makers and diverse stakeholders (Desouza and Yu, 2011). In this respect, policy informatics scholars need to combine computer and cognitive sciences with social science and domain knowledge in order to offer decision-makers and practitioners compelling visualisations, simulations, models and other representations of raw data and processed information. Such representations can then be used to track epidemics, monitor/forecast climate change as well as understand how policies in one domain can affect another, like for instance economic development policies that can affect environmental quality (Dawes and Janssen, 2013). Still, the specific characteristics of any particular government information resource strongly influence its fitness and usability for

analytical purposes. On these premises, a new kind of collaboration between research and practice and across academic disciplines is needed in order to harness and apply the potential of policy informatics (Helbig et al., 2012).

From an academic and research standpoint, the book introduces a multidisciplinary approach to policy informatics concepts. Using concrete cases from key sectors such as education, health and civil society activism the authors explore how computation and communication technology can contribute in dealing with complex public policy issues and changing the challenging social environments of our times. From an instructor perspective, in particular, the book comes of hand for courses at both an undergraduate and a postgraduate level, as a solid and integral contribution to the relevant literature. It offers concrete suggestions for future research paths on how policy information technology can enhance public decision making, facilitate the role of policy-makers in addressing complex challenges and upgrade the role of citizens as co-creators.

At the same time, the book offers both the theoretical background and a set of practical recommendations and guidelines to policy-makers, IT experts, managers and change agents who are concerned with the design, implementation and evaluation of system-level changes in the public sector. Also according to the literature, policy informatics can be particularly useful in answering important design considerations, as policy-makers and governance network administrators try to optimise governance configurations that add public value and address pressing social needs (Koliba et al., 2011). In this respect, the book offers useful design knowledge and development guidelines for those who wish to use computational-system modelling methods in order to identify emergent patterns when solving complex public issues, by illustrating the potential of policy informatics as tools that can contribute to greater situational awareness and showcasing the role that jurisdictional boundaries, institutional authorities, interest groups and governing rules and relationships play in shaping the governance and policy dynamics of a given situation and context.

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2   Information Politics Liberation and Exploitation in the Digital Society
   by: Tim Jordan (Author)
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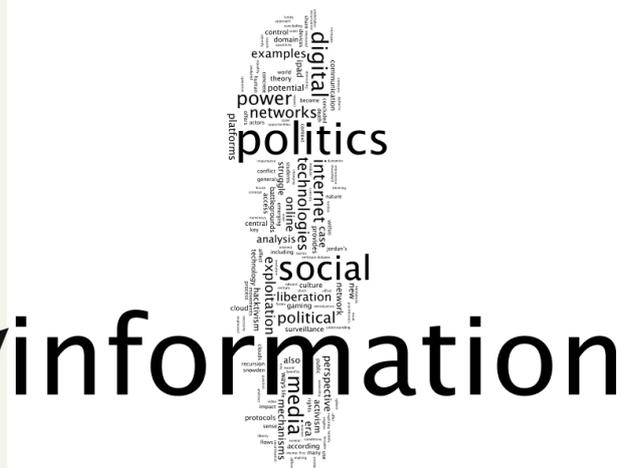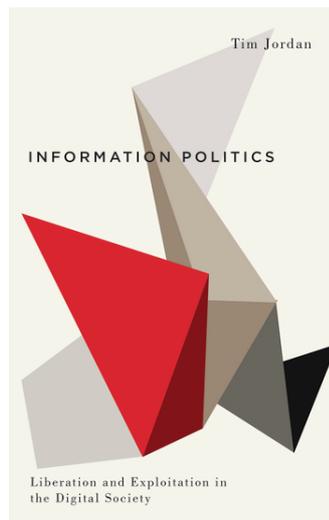
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Conflict over information has become a central part of 21st century politics and culture. The sites of struggle are numerous, the actors beyond count. Currents of liberation and exploitation course through the debates about Edward Snowden and surveillance, Anonymous, search engines and social media.

In Information Politics, Tim Jordan identifies all these issues in relation to a general understanding of the nature of an information politics that emerged with the rise of mass digital cultures and the internet. He also locates it within a field of power and rebellion that is populated by many interwoven social and political conflicts including gender, class and ecology.

The exploitations both facilitated by, and contested through, increases in information flows; the embedding of information technologies in daily life, and the intersection of network and control protocols are all examined in Information Politics. Anyone hoping to get to grips with the rapidly changing terrain of digital culture and conflict should start here.

List of chapters and appendices

Introduction: Information as a Politics

Part 1: Theory of Information Power

- Chapter 1. Recursion

- Chapter 2. Technologies' embrace

- Chapter 3. Network and protocol theory: dis/organising information power.

Part 2: Platforms

- Chapter 4. Clouds

- Chapter 5. Securitisation of the internet

- Chapter 6. Social media networks.

Part 3: Battlegrounds

- Chapter 7. Battlegrounds and the iPad

- Chapter 8. Death and gaming

- Chapter 9. Hacktivism: operation tunisia, modular tactics and information activism.

Conclusion: Information Exploitation and Information Liberation.

Chapter contents

In the introductory chapter of the book, on *Information as a Politics*, the author arguments on why and how the conflict over information has become a central part of 21st century politics and culture and gives an overview of the key points that will be analysed, taking stock of the concept of political antagonism as a central focus.

The first part of this book, entitled *Theory of Information Power*, introduces the author's perspective of the domain of information politics, an emerging topic which is gaining grounds in terms of interest and audience. Three key elements of this domain are analysed, namely recursions, devices and networks and protocols.

The opening chapter of this part, on *Recursion*, elaborates on a key dynamic feature of information power, namely its ability to contain itself, defined by the author as recursion. Analysis focuses on the conditions upon and manners in which information-based procedures can apply their outcomes to themselves.

Considering the huge dimensions of the information universe which has currently been produced, online and offline alike, *Chapter 2. Technologies' embrace* is focused on the challenge of shifting through haystacks of information, exploring the ways in which hardware and software devices control and codify information.

This discussion is concluded by *Chapter 3. Network and Protocol Theory: Dis/Organising Information Power,* in which the author discusses the interaction mechanisms between many kinds of human, technological and other actors, elaborating on how these actors are organised or even disorganised in recurrent patterns.

In the second part of the book, on *Platforms*, three important components of today's online environment are explored from an information politics perspective.

In *Chapter 4*, *Clouds*, which opens up this effort, the potential and limitations of the use of cloud platforms, are discussed. On top of that, the author elaborates on the mobility and flexibility that clouds offer to information management and further delves

into the potential benefits for cloud platform owners who, according to his perspective, are the ones that can actually profit from the data that they store for free.

Chapter 5. Securitisation of the internet that comes next discusses in detail current processes and practice that aim at making the internet more secure, from the perspective of nation states that seek to collect and profile all kinds of information. The author uses the case of civil rights and liberties in the USA and how these have been (and still are) threatened in the aftermath of 9/11 events, in order to explore what he considers as a paradox: the political struggles over the new dynamics of power afforded by the internet, in its role as the network of networks.

This information politics-oriented discussion of platforms is concluded with *Chapter 6. Social Media Networks*, in which the author analyses the case of social media networks as an architecture of information power, from the standpoints of both private and public stakeholders.

The third part of the book, entitled *Battlegrounds*, provides a number of recent examples of the exercise and struggle over information politics, in the form of case studies exhibiting different dynamics and levels of complexity.

In *Chapter 7. Battlegrounds and the iPad*, the production of an iPad is used as an example of information power in the sense of exploitation, in order to showcase the transformation (even deterioration) of working conditions and habits, alongside emerging trends of the digital economy.

Chapter 8. Death and Gaming turns to information politics examples in the world of video games. Based on a personal testimony, the author discusses the death of a player's video game avatar from an information politics perspective, examining information and other flows of power in relation to gender and race.

This discussion for interestingly heterogeneous, yet subtly analogous, examples of information politics is concluded with *Chapter 9. Hacktivism: Operation Tunisia, Modular Tactics and Information Activism*. In this chapter, the author undertakes a comprehensive analysis of the Hacktivism and hacking phenomena as information resistance movements, in the sense of movements struggling to liberate information mechanisms, drawing examples from the Zapatista movement of the 1990s and early 2000s up to WikiLeaks and the recent Snowden case.

Finally, in the concluding chapter on *Information Exploitation and Information Liberation*, the author provides a discussion on the ways in which information politics bring forward in the digital era new opportunities for exploitation, and at the same time new opportunities for liberation and struggle. A central aspect of this effort, leading back to the introductory discussion of the book, is to identify how recursions, devices and networks and protocols can come together in the domain of information politics in repeated patterns.

Significance for the state of research and practice

According to Coleman and Freelon (2015, pp.2, 3)

> "Rather than thinking of technology doing something to politics, we might think about politics itself as a technology … … in the sense that one technology (the political process) is affected by another technology (digital forms of producing and circulating information and communication)."

Towards this direction the book offers an in depth analysis of the evolution of digital culture as well as of communication technologies in politics. The author analyses the concept of information in the digital era as an exploitation but also as liberation of power mechanisms. In this discussion, he builds up on the general consensus in the literature that the tendency to use computers and networks to share information is largely a socio-behavioural issue (Raban and Rafaeli, 2007).

According to Freedom House (Freedom House, 2014), expanded powers for state regulators, content blocking, excessive intermediary liability, intrusive surveillance, data localisation and the lack of cybersecurity for human rights are some of many emerging threats in the digital era. On the other hand, securing cyberspace is hard because the architecture of the internet was designed to promote connectivity, not security (Giles, 2014).

In this context, the book offers very interesting and clarifying social and political insights to the question of who really controls the internet. The author undertakes a philosophical approach on the enablers and limitations that the world is facing as far as liberty and equality in the digital era are concerned.

Setting out to discuss the nature of information, the author explores several information architectures such as cloud computing, securitisation mechanisms and social media networks, alongside concrete examples of online activism, and ends up with proposing a theoretical model that considers the importance of digital citizenry and the necessity of thinking about the platforms we use in terms of the benefits that they offer with regards to openness, access and making.

In this endeavour, the author passes from abstract analysis on to numerous real life examples and debates about Edward Snowden and surveillance; the Anonymous movement; the Arab Spring; search engines and social media; increases in information flows; the embedding of information technologies in daily life; and the intersection of network and control protocols. Through cases such as iCloud, the iPad, online gaming and Hacktivism, the book essentially questions whether and how information can be connected to, and shape, social contestation.

In the case of social media platforms, for instance, which have become a privileged complement for social protests, enabling citizens to communicate, organise, share information, or change meeting locations (Sandoval-Almazan and Gil-Garcia, 2014) the author works towards what Dencik and Leistert (2015) consider a necessity: a critical approach to the relationship between social media (and online technologies in general, for that sake) and social protest, that brings to the foreground concerns about contemporary forms of social media activism, including questions of censorship, surveillance, individualism and temporality.

Concluding, we can only agree with the view expressed by Maréchal (2015), that by advancing cutting edge perspectives of information politics, and with a range of different angles, this book provides a challenging outlook on the struggle for control over access to information. Moreover, this new insight in the politics of information is achieved by treating them as an inherently antagonistic process, oscillating from information exploitation to information liberation and vice versa.

Significance for managers and instructors

As Raban and Rafaeli (2007) argue, ownership emerges as a catalyst to the flow of information and the willingness to share; simple system changes that affect the manner in

which information ownership is framed can significantly affect the degree of sharing. In light of this observation, the book provides an excellent starting point for those interested in the issue of access to information in the virtual world, treating in a holistic manner the question of who controls the access to information and how.

At the same time, the author also takes stock of the premise that, while the internet and its surrounding technologies hold the promise of reviving the public sphere, several aspects of these new technologies simultaneously curtail and augment that potential (Papacharissi, 2002). In this respect, Jordan discusses the transformation of social relations in the public sphere due to the advancement of the internet as a case of antagonistic exploitation and liberation mechanisms, exploring relevant work by writers such as Deleuze, Haraway, and Derrida and positioning these approaches within a digital era.

Jordan's analysis on the nature and evolution of cyberactivism is also of particular importance, given that the actual impact of information technologies, and social media in particular, on social movements is still not clear. According to Sandoval-Almazan and Gil-Garcia (2014), these could be low-cost tools with high dissemination potential for promoting political activism that derives from mobilisations of certain portions of the society. In this context, the book helps to identify an interesting area for future research on the potential impact and political behaviour models that social media introduce.

From an instructor perspective, the above features make Jordan's *Information Politics* a helpful reading for both graduate and undergraduate students, that combines a theoretical analysis of concepts such as cloud computing, securitisation mechanisms and social media networks with concrete information politics examples that students are familiar with, including iPad, online gaming and Hacktivism.

Moreover, as Coleman and Freelon (2015, p.1) state, it would be difficult to imagine how a development as world-changing as the emergence of the internet could have taken place without having some impact upon the ways in which politics is expressed, conducted, depicted and reflected upon. In this respect, this volume can be considered as a must-read for students, researchers and practitioners interested in the changing landscape of political communication, and the ways in which the politics of information itself can affect the manners in which information can be used for politics.

From a broader standpoint, digital practitioners and online communication managers wanting to explore the role of information in any social and political struggle will also find this book of interest, as an important aid for understanding and analysing how the web – as stressed since the late '90s – can participate in the historical decolonisation process empowering communities and individuals, within the overall context of global human, economic, environmental and cultural rights (Inayatullah, 1998).

Last but not least, by presenting in a concrete way the principles that govern the domain of information politics, Jordan's book offers to a broader readership an insightful synthesis into the transformations of the concepts of liberty and equality in the digital era.

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