PROCEEDINGS OF DRS

ISSN 2398-3132

EDITORS:

DAN LOCKTON
SARA LENZI
PAUL HEKKERT
ARLENE OAK
JUAN SÁDABA
PETER LLOYD

DESIGN RESEARCH SOCIETY

DRS

Bilbao 25th June — 3rd July

2022

Proceedings of DRS2022 Bilbao

Design Research Society International Conference

Bilbao, Spain,
25 June – 1 July 2022

Editors:
Dan Lockton
Sara Lenzi
Paul Hekkert
Arlene Oak
Juan Sádaba
Peter Lloyd

Proceedings of DRS2022 Bilbao
Design Research Society International Conference
25 June – 1 July 2022
Bilbao, Spain
www.drs2022.org

Cover and conference identity design by Cuchillo, Bilbao
Proceedings compiled by Lenny Martinez Dominguez

Editors: Dan Lockton, Sara Lenzi, Paul Hekkert, Arlene Oak, Juan Sádaba, Peter Lloyd

Proceedings of DRS 2022 International Conference

ISSN 2398-3132

Published by the Design Research Society
85 Great Portland Street
London, W1W 7LT
United Kingdom

ISBN 978-1-91229-457-2

Design Research Society
email: admin@designresearchsociety.org
website: www.designresearchsociety.org
digital library: dl.designresearchsociety.org

Founded in 1966 the Design Research Society (DRS) is a learned society committed to promoting and developing design research. It is the longest established, multi-disciplinary worldwide society for the design research community and aims to promote the study of and research into the process of designing in all its many fields.

DRS Special Interest Groups

Design Education (EdSIG)
Design for Health, Wellbeing and Happiness (SIGWELL)
Design for the Pluriverse (PluriSIG)
Design for Policy and Governance (PoGoSIG)
Inclusive Design (Inclusive SIG)
Global Health SIG (Global Health SIG)
Behaviour Change (BehaviourSIG)
Design for Tangible, Embedded and Networked Technologies (TENT SIG)
Objects, Practices, Experiences, Networks (OPENSIG)
Sustainability SIG (SuSSIG)
Experiential Knowledge (EKSIG)
Design Retail & Services Futures community (DRSF SIG)

DRS International Biennial Conference Series

DRS 2002 London; DRS 2004 Melbourne; DRS 2006 Lisbon; DRS 2008 Sheffield; DRS 2010 Montreal; DRS 2012 Bangkok; DRS 2014 Umeå, 2016 Brighton, 2018 Limerick, 2020 Brisbane.

DRS2022 Committees

Conference Chairs

Sara Lenzi, Bilbao Ekintza
Peter Lloyd, Chair of DRS

Programme Committee

Dan Lockton, TU Eindhoven, The Netherlands (Chair)
Sara Lenzi, Northeastern University, USA
Peter Lloyd, TU Delft, The Netherlands
Arlene Oak, University of Alberta, Canada
Paul Hekkert, TU Delft, The Netherlands
Juan Sádaba, Universidad del País Vasco, Spain

Conversations Committee

Peter Lloyd, TU Delft, The Netherlands (Chair)
Kees Dorst, University of Technology, Sydney
Rebecca Cain, Loughborough University, UK
Stella Boess, TU Delft, The Netherlands
Juan Giuseppe Montalván, Pontificia Universidad Católica de Perú

Workshop Committee

Catalina Cortes Loyola, University Del Desarrollo, Chile (Chair)
Alex Mitxelena, Universidad del País Vasco, Spain
Sara Lenzi, Northeastern University, USA
Natxo Rodriguez, Universidad del País Vasco, Spain
Ganix Lasa, Mondragon University, Spain
Aiur Retegi, Universidad de Deusto, Spain
Adrián Larripa, Universidad de Navarra, Spain

PhD Event Committee

Cecilia Landa-Avila, Loughborough University, UK (Chair)
Beatrice Gobbo, Politecnico di Milano, Italy
Francisco Tapia, University of Leeds, UK
Petra Salaric, Loughborough University, UK
Matt Lee-Smith, Loughborough University, UK
Angelina Pan, Loughborough University, UK
Vera van der Burg, TU Delft, The Netherlands
Sampsa Hyysalo, Aalto University, Finland

Labs Committee

Juan Sádaba, Universidad del País Vasco, Spain (Chair)
Arlene Oak, University of Alberta, Canada
Sara Lenzi, Northeastern University, USA
Maria Jesús del Blanco, Bilbao Ekintza
Carolina Gutierrez, Bilbao Ekintza

Keynote Debates Committee

Paul Hekkert, TU Delft, The Netherlands (Chair)
Sara Lenzi, Northeastern University, USA
Juan Giuseppe Montalván, Pontificia Universidad Católica de Perú
Juan Sádaba, Universidad del País Vasco, Spain

Local Organisation Coordination

Sara Lenzi, Bilbao Ekintza
Carolina Gutierrez, Bilbao Ekintza
Juan Sádaba, Universidad del País Vasco

Conference Advisory Committee

Johan Redström, Umeå Institute of Design, Sweden
Jodi Forlizzi, Carnegie Mellon University, USA
Rebecca Cain, Loughborough University, UK
Anna Vallgårda, IT University of Copenhagen, Denmark
Heather Wiltse, Umeå Institute of Design, Sweden
Stella Boess, TU Delft, The Netherlands
Lin-Lin Chen, TU Eindhoven, The Netherlands
Catalina Cortes Loyola, University Del Desarrollo, Chile
Kees Dorst, University of Technology, Sydney, Australia
Sampsa Hyysalo, Aalto University, Finland
Sabine Junginger, Lucerne University of Applied Sciences and Arts, Switzerland
Juan Giuseppe Montalván, Pontificia Universidad Católica de Perú
Tek-Jin Nam, KAIST, South Korea
Toshimasa Yamanaka, University of Tsukuba, Japan

Theme Track Chairs and Editorial Authors

Fernando Bajo, University of the Basque Country, Spain
Madeline Balaam, KTH Royal Institute of Technology, Sweden
Silvia Barbero, Politecnico di Torino, Italy
Alison Barnes, Western Sydney University, Australia
Somaya Ben Allouch, Amsterdam University of Applied Sciences, The Netherlands
Sankalp Bhatnagar, Northeastern University, USA
Thea Blackler, Queensland University of Technology, Australia
Spyros Bofylatos, University of the Aegean, Greece
Erik Bohemia, Shandong University of Art & Design, China
Elizabeth Boling, Indiana University, USA
Naz A.G.Z. Börekçi, Middle East Technical University METU, Turkey
Sofía Bosch Gómez, Carnegie Mellon University, USA
Úrsula Bravo, Universidad del Desarrollo, Chile
James Benedict Brown, Umeå University, Sweden
Jonathan Cagan, Carnegie Mellon University, USA
Rebecca Cain, Loughborough University
Sine Celik, TU Delft
Senthil Chandrasegaran, TU Delft, The Netherlands
Jonathan Chapman, Carnegie Mellon University, USA
Paolo Ciuccarelli, Northeastern University, USA
Ezequiel Collantes, University of the Basque Country, Spain
James Corazzo, Sheffield Hallam University, UK
Stefano Delle Monache, TU Delft, The Netherlands

Shital Desai, York University, Canada
Pieter Desmet, TU Delft, The Netherlands
Ingvild Digranes, Western Norway University of Applied Sciences, Norway
Brian Dixon, Ulster University, UK
Hua Dong, Brunel University, UK
Steven Dorrestijn, Saxion University of Applied Sciences, The Netherlands
Catherine Durose, University of Birmingham, UK
Wouter Eggink, University of Twente, The Netherlands
Chris Elsden, University of Edinburgh, UK
Delfina Fantini van Ditmar, Royal College of Art, UK
Karen Feder, Design School Kolding, Denmark
Nathan Felde, Northeastern University, USA
Deborah Fels, Ryerson University, Canada
Tom Fisher, Nottingham Trent University, UK
Elisa Giaccardi, TU Delft, The Netherlands
Inte Gloerich, Utrecht University, The Netherlands
Kosa Goucher-Lambert, University of California Berkeley, USA
Colin M. Gray, Purdue University, USA
Camilla Groth, University of South-Eastern Norway
Sune Gudiksen, Design School Kolding, Denmark
Ashley Hall, Royal College of Art, UK
Kevin Hamilton, University of Illinois at Urbana-Champaign, USA
Robert Harland, Loughborough University, UK
Marc Hassenzahl, University of Siegen, Germany
Leigh-Anne Hepburn, The University of Sydney, Australia
Sander Hermsen, Wageningen University, The Netherlands
Rosie Hornbuckle, University of the Arts London, UK
Michael Howlett, Simon Fraser University, Canada
Samuel Huron, Institut Polytechnique de Paris, France
Perline Hwee Ling Siek, USCI University, Malaysia
Irina Jackiva, Transport and Telecommunication Institute, Latvia
Dan Jackson, Northeastern University, USA
Derek Jones, The Open University, UK
Li Jönsson, Malmö University, Sweden
Silvana Juri, Carnegie Mellon University, USA
Patrycja Kaszynska, University of the Arts London, UK
Sarah Kettley, University of Edinburgh, UK
Miso Kim, Northeastern University, USA
Lucy Kimbell, University of the Arts London, UK
Eva Knutz, University of Southern Denmark
Danielle Lake, Elon University, USA
Sotiris Lalaounis, University of Exeter, UK
Carine Lallemand, TU Eindhoven, The Netherlands
Cecilia Landa-Avila, Loughborough University, UK
Matthias Laschke, University of Siegen, Germany
Marion Lean, Newcastle University, UK
Chang Hee Lee, KAIST, South Korea
Catarina Lelis, University of Aveiro, Portugal
Sylvia Liu, Hong Kong Polytechnic University, Hong Kong
Peter Lloyd, TU Delft, The Netherlands
Dan Lockton, TU Eindhoven, The Netherlands
Nicole Lotz, The Open University, UK

Geke Ludden, University of Twente, The Netherlands
Eva Lutnæs, Oslo Metropolitan University, Norway
Thomas Markussen, University of Southern Denmark, Denmark
Lorraine Marshalsey, University of South Australia, Australia
Sonia Massari, University of Pisa, Italy
Chris McGinley, Royal College of Art, UK
Daphne Menheere, Van Berlo, The Netherlands
Ezio Manzini, Polytecnico di Milano, Italy
Xanat Vargas Meza, University of Tsukuba, Japan
Nicolas Misdariis, Sorbonne University, France
Juan Giusepe Montalván Lume, Pontificia Universidad Católica del Perú, Peru
Marzia Mortati, Politecnico di Milano, Italy
Louise Mullagh, Lancaster University, UK
Blaise Nguendo Yongsi, Université Catholique d'Afrique Centrale, Cameroon
Claire Nicholas, University of Oklahoma, USA
Farnaz Nickpour, University of Liverpool, UK
Liv Merete Nielsen, Oslo Metropolitan University, Norway
Kristina Niedderer, Manchester Metropolitan University, UK
Nithikul Nimkulrat, OCAD University, Canada
Bettina Nissen, University of Edinburgh
Lesley-Ann Noel, North Carolina State University, USA
Arlene Oak, University of Alberta, Canada
Dietmar Offenhuber, Northeastern University, USA
Deger Ozkaramanli, University of Twente, The Netherlands
Paul Pangaro, Carnegie Mellon University, USA
Ann Petermans, Hasselt University, Belgium
Bruna Petreca, Royal College of Art, UK
Rob Phillips, Royal College of Art, UK
Anna Pohlmeyer, different, Germany
Tiiu Poldma, Université de Montréal, Canada
Monica Porteanu, University of Illinois at Urbana-Champaign, USA
Alison Prendiville, University of the Arts London, UK
Katelijn Quartier, Hasselt University, Belgium
Jeroen Raijmakers, Philips Design, The Netherlands
Johan Redström, Umeå Institute of Design, Sweden
Emma Rhule, United Nations University, Malaysia
Liz Richardson, University of Manchester, UK
Holly Robbins, TU Eindhoven, The Netherlands
Anna Rylander Eklund, Chalmers University of Technology, Sweden
Scott Schmidt, Georgetown University, USA
Irina Shklovski, University of Copenhagen, Denmark
Jules Rochielle Sievert, Northeastern University, USA
Nicos Souleles, Cyprus University of Technology, Cyprus
Neil Rubens, Visa
Rachel Charlotte Smith, Aarhus University, Denmark
Marie Louise Juul Søndergaard, The Oslo School of Architecture and Design, Oslo
Cláudia de Souza Libânio, Federal University of Health Sciences of Porto Alegre, Brazil
Chris Speed, University of Edinburgh, UK
Ben Sweeting, University of Brighton, UK
Ida Telalbasic, Loughborough University London, UK
Martín Tironi, Pontificia Universidad Católica de Chile
Leandro Tonetto, Unisinos University, Brazil

James Tooze, University of Brighton, UK
Emmanuel Tsekleves, Lancaster University, UK
Josina Vink, Oslo School of Architecture and Design, Norway
Klaasjan Visscher, University of Twente, The Netherlands
Mascha van der Voort, University of Twente, The Netherlands
Frithjof Wegener, Warwick University, UK
Alex Wilkie, Goldsmiths, University of London, UK
Heather Wiltse, Umeå Institute of Design, Sweden
Jie Xu, China Academy of Arts, China
Maria Yang, Massachusetts Institute of Technology, USA
Cristina Zaga, University of Twente, The Netherlands

Contents

Jun 25th, 9:00 AM

Design for Policy and Governance: New Technologies, New Methodologies

Marzia Mortati
Politecnico di Milano, Italy

Scott Schmidt
Georgetown University

Louise Mullagh
Lancaster University

Citation

Mortati, M., Schmidt, S., and Mullagh, L. (2022) Design for Policy and Governance: New Technologies, New Methodologies, in Lockton, D., Lenzi, S., Hekkert, P., Oak, A., Sádaba, J., Lloyd, P. (eds.), *DRS2022: Bilbao*, 25 June - 3 July, Bilbao, Spain. https://doi.org/10.21606/drs.2022.1066

DRS 2022
Bilbao 25th June — 3rd July

Editorial: Design for policy and governance: New technologies, new methodologies

Marzia Mortati[a], Scott Schmidt[b*], Louise Mullagh[c]

[a]Politecnico di Milano, Italy
[b]Georgetown University, USA
[c]Lancaster University, UK

*Corresponding author e-mail: ss4210@georgetown.edu

doi.org/10.21606/drs.2022.1066

Abstract: This position paper pays particular attention to new and upcoming areas of research where design disciplines and policy studies are exploring new ways toward convergence. This involves in particular the examination of ways in which creativity-based methodologies (i.e., co-creation and co-production) are being used in conjunction with new technologies (i.e., big data and algorithms) to deliver better policies and services. The papers examined fall into three areas including institutions and citizen engagement, new technologies and practices, and frameworks and methods. We conclude by proposing a research agenda to advance Design for Policy and Governance. The following is taken from the entirety of works that make up the first theme track assembled by the Design for Policy and Governance Special Interest Group (PoGoSIG) of the Design Research Society, 'Design for Policy and Governance: New Technologies, New Methodologies'.

Keywords: policy for design, public administration, public policy

1. Introduction

Presently, the topic of design for policy is very much open for debate as to how these two concepts differ, relate, and interact with one another. There exists very little agreement on their relational trajectory with one course, policy design, originating in the policy studies tradition while the other, design for policy, being founded in design studies. The former sees the need for policy to instrumentally embody a conscious design of its own making while the later holds that design is a pre-existing field of study unto itself that can be employed in accordance with policy formation (Bason, 2014; Howlett, 2019).

Although explicitly connected to the same subject matter, each direction is built upon differing criteria and parameters thus creating two unique starting points which at times overlap and at other times deviate considerably. Recently, the design research community has been

particularly active and developed knowledge useful to manage complex processes, characterized by the participation of actors with different interests and cultures, in which the final recipients often have an active role as co-creators and co-producers (Sangiorgi & Prendiville, 2017; Mortati, et al., 2018). Innovative services and governance models are thus being explored and developed by designers within the public sector, either built from the bottom up (collaborative services) (Deserti et al., 2020) or trialing the role and relevance of new and disruptive technologies (AI, Virtual Reality, Blockchain, …) (Kuziemski & Misuraca, 2020).

This position paper pays particular attention to these new and upcoming areas of research where design disciplines and policy studies are exploring new ways toward convergence. This involves in particular the examination of ways in which creativity-based methodologies (i.e., co-creation and co-production) are being used also in conjunction with new technologies (i.e., big data and algorithms) to deliver better policies and services.

How are these methods reconciling the perspectives of government, citizens, and society (i.e., participation in policymaking)? What makes them specific to policy making? What role is design having in exploring the uptake of new technologies for policy making and public service implementation? How is design helping complement a human approach into the typical need for quantitative evidence of Government?

Reflecting on these questions, the 'Design for Policy and Governance: New Technologies, New Methodologies' track of the DRS2022 Conference has aimed at exploring how design disciplines and policy studies are exploring new ways in which creativity-based methodologies are being used in conjunction with new technologies to deliver better policies and services. The selected papers concentrate on the following topics:

- **Institutions and citizen engagement**, examining the mechanisms and processes that support innovation through design for policy and governance;
- **New technologies and practices**, looking at how public administrations can be supported in transforming their processes and strengthening their collaboration with urban stakeholders;
- **Frameworks and methods**, understanding policymaking at a range of scales.

In this positioning paper, we reflect on how selected papers have contributed to the advancement of these topics. We also draw a larger picture to illustrate how design practices in policy and governance are contributing to new ways toward convergence. Finally, we will address proposing a research agenda to advance Design for Policy and Governance.

The following marks the first theme track assembled by the Design for Policy and Governance Special Interest Group (PoGoSIG) of the Design Research Society. Of the 10 papers accepted as part of this track and the various reviewers and chairs nine countries were involved including Canada, Cyprus, Denmark, Finland, India, Italy, Portugal, United Kingdom, United States.

2. Institutions and citizen engagement

Increasingly, a number of governmental institutions are turning to new approaches in policy and service design as the interest in innovation labs, evidence-based policymaking, and design thinking increases within the public sphere (McGann et al., 2018). The track 'Design for Policy and Governance: New Technologies, New Methodologies' investigates several papers on the topic including the application of design-led approaches to public sector innovation through policy labs (Lehtinen, 2022), design thinking among municipalities (Starostka et al., 2022), government led co-design programs (Peruzzi et al., 2022), and community-based design for resilience (Fonseca Braga et al., 2022).

Lehtinen (2022) sets out to define the application of design-led approaches to public sector innovation by highlighting the first of its kind case study on the New Zealand government Service Innovation Lab. The paper presents findings based on semi-structured interviews and documentation taken over time from professionals involved in its operation. Lehtinen argues that public sector innovation labs (PSI) have grown out of the development of design-led approaches to public policy in the past several years with practice outpacing the literature. When creating and maintaining collaborative conditions for design-led innovation approaches delivered through PSI labs selected key findings of the case study included: an authorizing environment for strategy, strong leadership and culture at the operational level, and cross sector funding in a fully neutral, separate space. The overall conclusion of the paper is that conditions for innovation within the lab could be created on a strategic and operational level through an optimal environment, leadership, and culture.

Starostka and Götzen (2022) look to better understand the role of the designer within a municipality and how public organizations engage design thinking. In order to do this the authors present three differing Denmark municipalities and define how each understands and implements both design and design thinking. The authors call for a more realistic approach to design thinking in public administration as they believe design thinking is gaining further acceptance while also voices are becoming equally critical. Their findings identify three different approaches towards design with each municipality having its own unique take demonstrating many different paths to success. The authors noted that in all cases design was used as a tool (prototypes) or process (citizen engagement). However, there remained many differences between each municipality as different implementation practices lead to differing results. They find that design can influence public administration practices in three ways: manage power relations, implement quick results, and operate on a micro-scale level. The authors conclude that at the outset design thinking was thought of as straightforward when applying it to large organizations, however this is not the case.

Peruzzi, Di Matteo, Varano, Pardini, and Carroccia (2022) address co-design and its manifestation within the Italian government when applied to innovation development. The paper

examines the implementation of a new Italian public accounting entity based on requirements developed through multidisciplinary innovation teams. The impetus of the teams was the I-Lab Program, adopted to manage and develop a focus on real needs of the end-user and provide reliable solutions. At the center of the paper lies the use of I-Lab and its allowance of collaboration via the following pillars: agile path of discovery, involvement of people, collection of user feedback, and prototyping. The paper concludes that the use of design enabled structural adoption of new models and introduced processes that allowed the achievement of user-centricity through co-design and the use of teams.

Fonseca Braga and Tsekleves (2022) examine how dialogic practices can enable community resilience when addressing inequalities in emergency and recovery efforts. Their paper attempts to demonstrate that key design capabilities can lead to effective community involvement in the decision-making process that enables community resilience. The authors focus on the recent COVID-19 pandemic and find that designers can serve a community by bringing together various stakeholders and building meaningful conversations. They propose several key design capabilities which contribute to dialogue: foster connections, take a holistic view, contribute to sense making, synthesize ideas, visualization, and active listening. In conclusion, the authors find that overall successful participatory approaches that enable resiliency within a community include empowerment, ownership, commitment, and trust-building between various groups.

The throughline of all four preceding papers includes the use of governmental institutions and citizen engagement to support innovation through design in the public sector. While several authors indicated that further investigation is critical to this area as greater complexity arises, the resounding takeaway is that design has increasingly become important within and between government and the community in regard to civic engagement and involvement of stakeholders.

3. New technologies and practices

Another important point covered by the track concerns the need for transformation for public administrations and the ways in which public services are conceived and implemented. Several tensions stress the existing model including societal transformations that require public administrations to tackle new and complex challenges such as demographic change, employment, productivity (i.e., overload of administrative processes), mobility challenges, etc. There is general agreement that the current government and public sector structure and modes of operation belong to a different age, where society was characterized by a homogeneous and relatively static population, with uniform demand for services and products (Mulgan and Albury, 2003). The “one size fits all” approach is now in contrast with a dynamic, demanding and extremely diverse population, thus proposing challenges with no straight-forward solutions – less resources coupled with increased public expectations and societal transformations are the main source of complexity (Sun and Medaglia, 2019). For example, increased population diversity and globalization are confronting governments with aging

populations, migration, increased ethnic mix, asking: 'What governance structures and what organizational settings are best suited to support the transformation required? What services could match the needs of such a differentiated audience?' In parallel, increased expectations require individual responses to problems and better preparation for life choices. The public increasingly asks for a new dimension in public value, mirrored in personalization, direct involvement, and flexibility. This picture draws an uncertain future for the public sector, where technology is a strong driver for change. Disruptive technologies (Kuziemski and Misuraca, 2020), like Artificial Intelligence, virtual reality, block-chain, and others are changing opportunities and risks while accelerating change and proposing new visions connected to: increasing efficacy and effectiveness of public services, enabling personalization of public services, helping policy and decision makers anticipate public problems and use of data for public good, helping policy and decision makers to involve the population directly in problem resolution and or in making strategic decisions.

Therefore, new visions are hinting at a future of personalized policies and services where changes can be anticipated analyzing data and making the public responsive while also leveraging more effective citizen engagement. Despite promises though, new technologies are currently out of the control of policy makers. Even if the misalignment between technological revolutions and socio-institutional change is a constant element in evolutionary processes, what we are experiencing today seems far more disruptive. New ethical issues are emerging that society is not ready to handle and should be studied more thoroughly through new and necessary data being created that should be used in appropriate ways. As an example, personal decisions (such as buying an apartment or enrolling children to school) are increasingly affected by public data and despite technological potential the current scenario describes huge difficulties in handling fragmented datasets – they come from different sources, are produced in different moments, and delivered in poorly integrated forms. At the same time, public policies need to increasingly leverage personal data related to individual behavior, personal habits, investment decisions, and professional choices as these elements strongly impact local communities, quality of life, and living conditions.

The 'Design for Policy and Governance: New Technologies, New Methodologies' track contributes reflections to the complex debate on these issues describing both experiments with new technological tools to aid decision making (Prabhakar, 2022), and experiments on enhancing participation and public understanding of the use and benefits of these technologies (Mullagh et al., 2022).

Prabhakar (2022) presents a conceptual framework for the application of some tools for assessing the quality and effectiveness of public governance. The paper proposes a rich exploration of demand side tools used by civil society groups to proactively monitor government programmes and services, analyzing mainly three aspects: social audits in the form of public hearings, community score cards used at local levels, and citizen report cards used at multiple levels. For each of these, the author compares features and limitations to then focus on citizen report cards as the most structured and demanding in terms of organization, financial

resources, and technical skills. The paper proceeds to propose a framework to strengthen the diagnostic power of the tool as well as a set of tools to guide the reform process. The paper concludes by presenting limits along with future research to further develop the tool presented, which - if developed more - might become a useful aid to policy makers for the diagnosis of governance problems and the design of reforms.

Mullagh, Jacobs, Kwon, Markovic, Wainwright, Chekansky and Cooper (2022) investigate IoT devices in public spaces to explore how two novel methods (design fiction and walkshops) can be combined and embedded in the design of policy for IoT governance at a local level. Authors start from the recognition that IoT devices and sensors have become a daily presence in the life of citizens, irrespective of the size and strategic objectives of cities. They continue proposing a study of application of a particular design method (design fiction) in designing policies for emerging technologies in public places. In particular, they explore the potential impacts of the use of a range of IoT devices and sensors in order to support evidence-based policy development. By using design fiction and carrying out two walking workshops, in person with council officers and online with IoT experts, the authors describe benefits and barriers to the explainability of new technologies in public environments and propose a set of policy recommendations for the local public administration wishing to adopt such technologies. Finally, they explore the implications of these findings and set out an agenda for future research in this area.

Overall, these discussions identify an important area of reflection for the scholarly community working in the field of design for policy. Here, new empirical analysis and experiments are needed to better understand ways to build the intelligent, responsive, and co-created public administrations of the future with technology as a medium to support new governance as well as co-production and co-delivery of public services. Inherently to this vision, the track proposes further reflections on how to use design and technology to tackle a twofold challenge: on the one hand create pilot experiments and software co-designed with municipalities and society that can be effective to rethink the provision of public services through AI; on the other hand, envision the governance and smart public administration of the future, where automation can help shift policy making from provider of solutions to change-precursor for personalized public services.

4. Frameworks and methods

In exploring the relationship between design and policymaking there is an increasing body of work that tackles specific design methodologies within the practice of policy. Enacting policymaking at a range of scales and across vast subject areas is complex, and the potential for design to contribute is at the core of this paper. Within the realm of policy design, which has existed in various conceptualisations since Simon (1969) introduced the idea, a broad approach to design has been adopted. Most notably, the use of ‘design thinking’ has been applied to policy design, where the use of creative methods is used in solving problems. This

broad approach, which highlights the value of thinking and acting in a creative manner, embeds Simon's definition of design as the division of 'courses of action aimed at changing existing situations into preferred ones. Whilst this approach has been useful in enabling public managers to explore new modes and methods of policy making, it has perhaps led to a somewhat limiting view of design and its methods. Since Simon wrote 'The Science of Design' in 1988, design as a mode of practice and research has developed (Simon, 1969) and there are now multiple methods and approaches available to those involved in policy making that go beyond design thinking. Furthermore, policy making as a problem to be solved, and the role design can play in this has also been explored more recently (Junginger, 2014).

This track highlights the broad range of design methods that are being explored at all levels of policy making and across a range of policy areas. Writing from the perspective of public management and the potential for co-design, Bebbington, Cruickshank and Hayes (2022) explore how public value can be created through embedding design methods. The use of design is often considered within the policy cycle itself, and through the potential to engage users and policy makers within the development process through to implementation. Rather than being the exclusive domain of the designer or researcher, the authors explore how the public manager can be equipped with the tools and skills to work towards creating public value. Through explicitly exploring the use of co-design, the paper offers a unique perspective on how this design method might be used within public management.

The exploration of rapid-prototyping global health policies by Fonseca Braga et al (2022) highlights the potential of bringing a range of expertise together to quickly develop insights into complex challenges. Through carrying out online workshops, facilitated by the UNU-IIGH and supported by design researchers, rapid prototyping was used to quickly explore and develop speculative policies in the field of public health. The need for embedding situated and lived experience in the development of public health policies was a key highlight of the work. Through providing the participants (design researchers, policy makers and public health specialists) with a space in which they were free to explore and to not be concerned about potential failure, the use of rapid prototyping enabled important conversations not only about the policy, but also the methods that might be used to develop and implement it.

Often explored at particular stages in a policy cycle, such as the gathering of evidence, citizen engagement and evaluation, design also has the potential to be deployed at an 'enlarged' level. Monteiro et al (2022) propose that 'design for policy' is in itself a method, which can be deployed throughout the whole policy cycle. Using the New European Bauhaus as an example the authors propose an enlargement of the 'design for policy' framework that equally embraces all stages of the public policy cycle, most especially considering this to be the right time to do so.

The scale at which design methods are explored in the policy making process is discussed by Alvarez et al (2022), whose research is situated in reforming Bovine Tuberculosis in Argentina. The work explores the potential impact of design methodologies in the early stages of

the process, notably the problem-setting, sense-making and problem-solving spaces (Manzini, 2016). A key finding of the work is that we must understand and explore further the ways in which design contributes in a rigorous way to policy making, and where value lies in offering creative approaches to the formulation of policy at different scales. Furthermore, the assessment of design approaches in this realm has not been studied in depth and therefore this work offers a key contribution to our research agenda. In order to ensure the use of design and its embedding with policy making we must explore and develop methods to understand the impact of our work, which in turn can help to validate these approaches with policy makers.

Whilst the exploration of methods and frameworks within this track highlights the innovative ways in which design is being deployed in policy making and public management, it also offers the opportunity to question whether we need to adapt these or indeed to develop new methods that are specific to policy making. It is also vital that we understand the impacts of using design research and methods in policy making, which will require new tools, methods, or frameworks for assessment.

5. Proposing a research agenda to advance Design for Policy and Governance

The open questions when we discuss convergence between policy studies and design for policy are still many. Overall, the research community working in this field is still trying to build a cohesive approach and a shared understanding of the added value that design might bring when engaged with new objects, namely policy and governance settings in public institutions. The papers collected in this track contribute to the discussion around challenges and advantages of embedding design in policy making, reflecting on several issues.

When it comes to the mechanisms and processes that support innovation through design for policy and governance, we see that great strides have been taken when considering institutions and citizen engagement. There does exist some hesitance on the validity of elements such as policy labs, however the resounding takeaway is that design has increasingly become important within and between government and the community in regard to civic engagement and involvement of stakeholders.

New technologies and the related practices aimed at strengthening the collaboration between public administrations and urban stakeholders are another important area of investigation. On this topic, design researchers are working consistently to figure out methods and tools to deal competently with new technologies (i.e., Artificial Intelligence). However, scant exploration and empirical analysis is currently focused on embedding these technologies in public administrations or more in general in the public sector adopting a design approach. However, as technological advancement is unavoidable more expert research is needed to understand the value and specific competence that design can bring to support transformation at this complex junction. In this area, the design research community needs to spend

more time discussing and identifying future desirable scenarios to envision the smart, responsive, and inclusive public administration of the future, while also experimenting and prototyping ways to effectively introduce new technologies that can help shift policy making from provider of solutions to change-precursor for personalized public services.

When considering the area of understanding policymaking at a range of scales there remains much work to do. The current broad range of design methods that are being explored at all levels of policy making and across a range of policy areas is exciting. Yet, it is also vital that we understand the impacts of using design research and methods in policy making, which will require new tools, methods, or frameworks for assessment. As technology continues to offer new ways in facilitating the needs of the electorate so too will designing for and through complex problems.

6. References

Bason, C. (2014). Design for Policy. London: Routledge.

Bebbington, J., Cruickshank, L., Hayes, N (2022) Co-Designing Public Value: Collective Ownership of Outcomes in the Public Sphere. DRS2022. Proceedings of the DRS2022 Conference

Braga, M., Tsekleves, E. (2022). Design capabilities for community resilience: towards dialogic practices and policies. DRS2022. Proceedings of the DRS2022 Conference.

Deserti A., Rizzo F., & Smallman M. (2020). Experimenting with co-design in STI policy making, Policy Design and Practice, DOI: 10.1080/25741292.2020.1764692.

Howlett, M. (2019). The Policy Design Primer: Choosing the Right Tools for the Job. New York, NY: Routledge.

Junginger, S (2014) Towards Policymaking as Designing: Policymaking Beyond Problem-solving and Decision-making, Bason, C (ed) (2014) Design for Policy, Farnham, Gower Publishing, pp.57-69

Kuziemski, M., Misuraca, G. (2020). AI governance in the public sector: Three tales from the frontiers of automated decision-making in democratic settings. Telecommunications Policy, 44(2020) 101976.

Lehtinen, J., (2022). Applying Design-led Approaches to Public Sector Innovation: A Case Study of New Zealand's Service Innovation Lab. DRS2022. Proceedings of the DRS2022 Conference.

Manzini, E. (2016). Design Culture and Dialogic Design. Design Issues, 32(1). https://doi.org/10.1162/DESI_a_00364

McGann, M., Blomkamp, E., Lewis, J. (2018). The Rise of Public Sector Innovation Labs: Experiments in Design Thinking for Policy. Policy Sciences, 51(3), 249–67.

Mortati, M., Christiansen, J., Maffei, S. (2018). Design craft in Government, Positioning Paper – Track 4, Conference Proceedings, ServDes 2018, 18-20 June, Milan, Italy.

Mulgan, G., Albury, D. (2003). Innovation in the Public Sector, Cabinet Office Strategy Unit, United Kingdom Cabinet Office, London.

Mullagh, L., Jacobs, N., Kwona, N., Markovic, M., Wainwright, B., Chekansky, K., Cooper, R. (2022). Participatory IoT Policies: A Case Study of Designing Governance at a Local Level. DRS2022. Proceedings of the DRS2022 Conference.

Peruzzi, G., Di Matteo, A., Varano, M., Pardini, M., Carroccia, G. (2022). I-Lab: the co-design program for the construction of the new ERP system of the Italian State. DRS2022. Proceedings of the DRS2022 Conference.

Prabhakar, K. (2022). Tool for Assessing Supply Side Governance: FMA & SET Policy Analysis Approach. Level. DRS2022. Proceedings of the DRS2022 Conference.

Sangiorgi, D., Prendiville, A. (Eds.). (2017). Designing for Service: key issues and new directions. Bloomsbury Publishing

Simon, H.A. (1969). The Sciences of the Artificial, Cambridge, Massachusetts and London, England, MIT Press.

Starostka, J., Götzen, A., (2022). "What a designer does in a municipality?" – different approaches towards design in 3 Danish municipalities. DRS2022. Proceedings of the DRS2022 Conference.

Sun, T.Q., Medaglia, R. (2019). Mapping the challenges of Artificial Intelligence in the public sector: Evidence from public healthcare. Government Information Quarterly, 36(2), 368-383.

About the Authors:

Marzia Mortati Associate Professor and Head of the Master of European Design at Politecnico di Milano, Milan, Italy

Scott Schmidt PoGoSIG Convener and Adjunct Lecturer at Georgetown University, Washington, DC, United States

Louise Mullagh Senior Research Associate: Population & Policy at Lancaster University, Lancaster, UK