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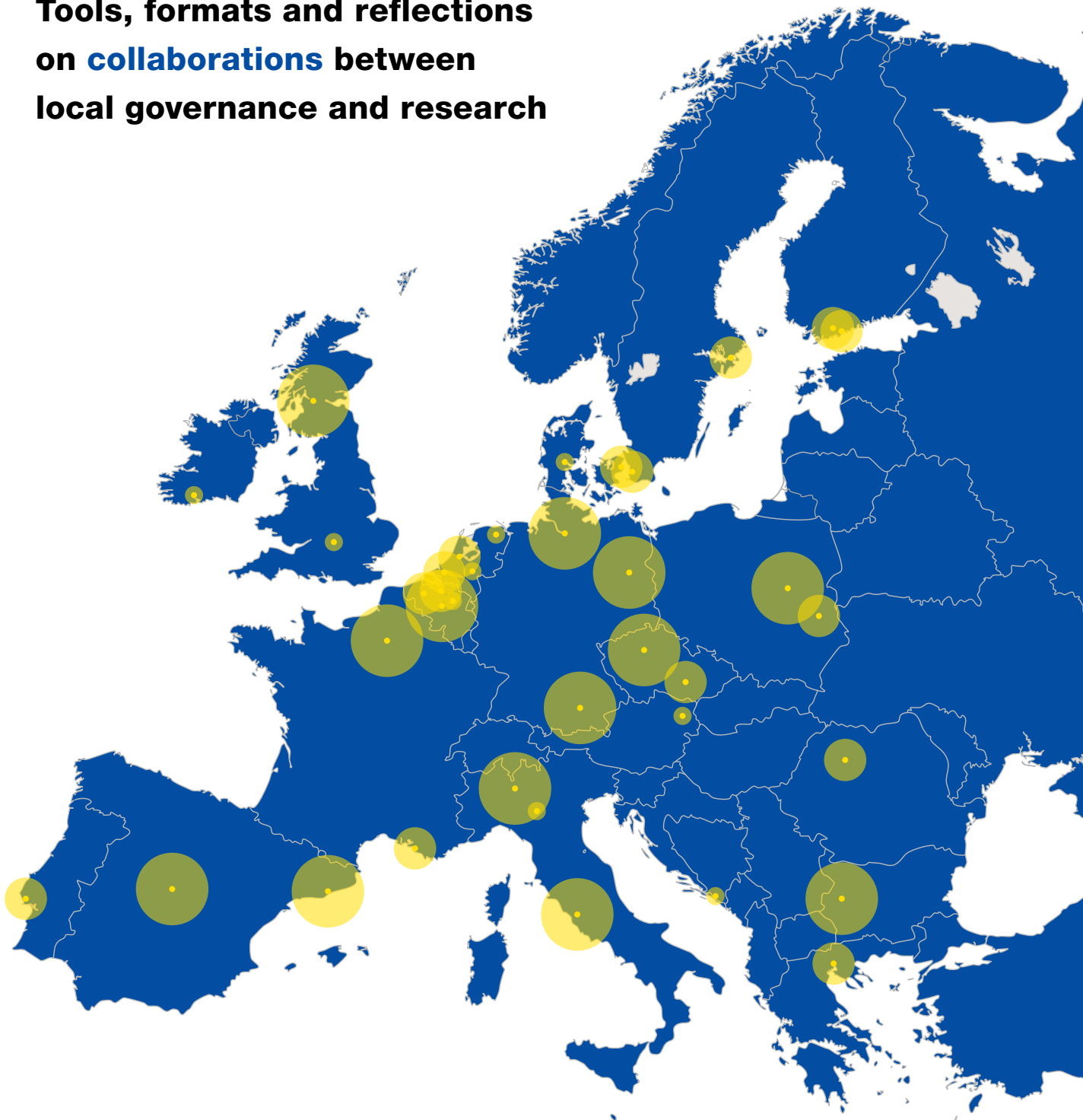
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# Blueprints for Messy Cities

Tools, formats and reflections  
on **collaborations** between  
local governance and research





# Blueprints for Messy Cities

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local governance and research

Maria J. Arche and Peter van der Maas (eds.)

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# Introduction

**María J. Arche. Institute for Inclusive Communities and Environments,  
University of Greenwich**

## Welcome to the fourth report of the City Science Initiative.

This publication gathers essays that focus on the scaling up, sustainability and impact of the Initiative, as well as case studies captured in the now traditional yellow pages. This report has been developed amid a transition stage. It was conceptualised and titled by Caroline Nevejan, the founder at the meeting she chaired in Amsterdam in November of 2024, and has been prepared and finalised at a posterior time, after I got the leading responsibility in the summer of 2025. The transition soon revealed itself as a golden opportunity to take stock of the valuable mindset that the CSI had instilled across so many researchers and city professionals, the new venues for innovation the CSI had instigated, and the added value that different stakeholders met in the journey, both from Academia and the cities, such as UNICA, Aurora or Eurocities, brought to deliver the CSI agenda.

At all events I've attended in the past months, a strong appetite to continue growing the City Science Initiative has been made very clear. In times when disinformation and scepticism rise, science and evidence-based knowledge are coming back to reclaim their position as the best way known to bring effective solutions to the challenges we face (climate emergency, biodiversity loss, energy transition, housing shortages, digital transformation, demographic change and social inequality). City Science is an initiative to turn evidence-based knowledge into action through collaboration with those in charge of designing the policies that affect us all; an initiative to render scientific evidence into functional knowledge that feeds the channels where it can be used directly.

The CSI aims at growing in becoming a firm point of reference to roll across the multi-disciplinary, multi-sectoral and multi-agency approach ingrained in its DNA and making organic collaboration between researchers and cities the paradigm by default. CSI wants to continue being the point of reference for the understanding of the connection between policies at local level and the national and international frameworks that set the challenges. By its very nature of being an international network of cities and researchers, CSI is excellently placed to make sense of the dynamics of the global-local.

Mindful of the questions and challenges that collaborations pose, in this report we present reflections on how to make them work. The papers of the contributors reflect discussions held across online and face to face meetings in Amsterdam and Braga over the past year. The report is divided in five

chapters, authored by researchers and professionals of cities, showcasing the international and multisectoral take of the initiative. Chapter one, authored by Peter van der Maas and Pietro Reviglio, both professional experts in cities, presents an overview of the CSI from its beginning as a strategic platform gathering researchers, urban policy experts, and the services of the European Commission, to the ambitions of consolidation for the future, moving beyond case-study projects to structured mechanisms that embed science-policy interfaces in governance. Chapter two presents a conversation between Caroline Nevejan, founder of CSI, both academic and civil servant and academic Valeria Fedeli, reflecting on the role of cities in improving the relationship between society and science, the key underpinnings to fruitful inter- multi- and transdisciplinary collaborations and the role of chief science officers and politicians. Chapter three discusses different collaboration formats and ventures a sketch for a typology to advance our scholarly reflection about how to embed insights into infrastructure in a sustainable manner across themes and issues, from ecological transitions to the delivery of youth justice, highlighting the role of communities. The chapter presents evidence from two major cities, Paris and London, and is authored by academics (María Arche) and professionals from municipalities (Emma Clements, Noam Marseille, Blanche Babin) and knowledge broker organizations (Aiysha Qureshi). Chapter four focuses on methodologies to enable representation, scenario building and forward thinking in cities. In particular, the chapter discusses storytelling in detail, as a methodology to address and bring change to problems that may look unsurmountable. This chapter also showcases an international and multisectoral collaboration between academics (Barbara Buchenau, Florian Freitag, Mona Gutmann and Jacqueline Ruffen from the University of Duisburg-Essen, Jeroen Bourgonjon from Ghent University and Marcus Zepf from the University Paris-Est Créteil) and professional from public services (Victor Buwalda from Public Health Services Amsterdam). The report closes with a chapter about impact, reflecting on the general framework of innovation of the European Union and different paradigms of impact evaluation. The authors evaluate top-down approaches, quantitative in nature, and bottom-up ones, grounded in community participation, and propose a hybrid model that makes use of objective data while including local communities that provide contextual relevance. The chapter is authored by Christian Iaione, Davide Testa and Mario Manna from Luiss University and LabGov-LABoratory for the GOVERNance of the Commons and Rubina Michela Galeotti from Università Mercatorum.

The support received from the organizations and institutions that made the meetings (Aurora, Eurocities, City of Amsterdam) and this report possible (the University of Greenwich and Unica), is witness to the ongoing support to the CSI enterprise. I thank the authors of the chapters for their work and friendly correspondence throughout; Peter van der Maas for his continuous support and leadership on the yellow pages and Kornelija Bružaitė for her work on the final design.

## From co-existence to co-creation: examples of the transformative university-city relationship in the UNICA network

Alexandra Duarte, Laura Brossico and Luciano Saso  
UNICA network of the Universities from the Capitals of Europe <sup>1</sup>

At their core, universities have never simply been places, but communities of intellectual exchange, historically inseparable from urban life. Still, for a long time, they have been secluded and societally detached institutions. But this is changing: as universities are no longer just knowledge production centres but active contributors of evidence-based solutions, cities are not perceived as urban landscapes, but as laboratories of transformation.

What has changed, and that now makes all the difference, is intentionality.

The relationship between universities and cities is no longer incidental; it is structural and strategic. Universities emerge as active urban actors, influencing spatial planning, economic development, and social cohesion. They are not merely in the city; to be truly relevant, they must be of and for the city, aligning their teaching, research, and service missions with urban challenges. Knowledge is no longer the monopoly of academia but emerges through dialogue with policymakers, cultural institutions, and citizens. Cities provide real-world challenges and experimental grounds, while universities contribute research, critical thinking, and innovation.

This transformation is particularly evident in universities based in capital cities, which operate at the crossroads of political power, cultural life, innovative processes, and global connectivity. Hybrid learning environments, interdisciplinary collaboration, and flexible spaces reflect broader urban dynamics, blurring the boundaries between university and city.

Most impressively is that this is not abstract: these transformations are visible in the architecture of universities, with literal walls being torn down to allow for open spaces that blend the university and the city. Take for instance Usquare, an urban/inter-university district created by Université libre de Bruxelles (ULB) and Vrije Universiteit Brussel (VUB). In partnership with the Brussels-Capital Region, the universities are transforming a military complex into an open, diverse, sustainable district for students and residents by 2028. One of the first steps was precisely to remove the wall that hid the complex behind. Conceived as a “city within a city”, this is becoming a porous urban neighbourhood where academic, residential, and civic functions

<sup>1</sup> Founded in 1990, UNICA is an institutional network of 52 universities from the 38 capitals of Europe. In capital cities - where decisions are made, ideas circulate, and global challenges are felt first - universities play a pivotal role in shaping Europe's future. UNICA provides these institutions with a trusted platform to connect, collaborate, and act collectively in the pursuit of a stronger European Higher Education and Research Area. UNICA has been active within the City Science Initiative since 2019 (<https://www.unica-network.eu/activity/working-groups/unica-the-city/>)

coexist. Among other things, it will house an international welcome centre, an Institute for Advanced Studies, family homes and student residences, various neighbourhood facilities and a sustainable market.

Similarly, the University of Sarajevo is repurposing structures that once served other city functions by developing the former army barracks into a new campus, in a location with strong potential for urban revitalisation. Furthermore, it envisions the development of an open space system linking the area to the wider context of Sarajevo's urban landscapes and green infrastructure.

A different yet successful example of blending the university to its surroundings is the University of Cyprus' Learning Resource Centre - Library 'Stelios Ioannou', which opened in late 2018. Considered as an “earth-work” rather than a building, the centre is covered in green and blue fabric, blending in with the mountainous surrounding landscape. Beyond this, the centre is challenging the traditional libraries by providing not only resources for learning, but also tools to help people turn that knowledge into new ideas and solutions.

Another recent example of innovative architectural link between academia and the city lies within the campus of Nova School of Business and Economics from NOVA University Lisbon, inaugurated in 2018. Located opposite the Carcavelos beach, the campus was constructed on principles of innovation, sustainability, and community impact. Its design deliberately blurs the boundaries between university and city, making the campus a permeable space that is open to the public and deeply integrated into its coastal surroundings. A noticeable example of this connection is the pedestrian tunnel linking the campus directly to beach. Beyond this symbolic link, the campus hosts applied research and innovation hubs that work closely with industry partners.

These are just a few striking examples across our network of universities from Capitals cities of Europe that demonstrate how the relationship between universities and cities is moving from coexistence to cocreation. Universities are becoming civic institutions with responsibilities toward the urban environments they inhabit. In turn, cities are no longer passive backdrops but active partners in knowledge production and innovation.

Ultimately, we could say we are witnessing an historical loop, as we revisit the very same borderless concept of community that characterised the first group of scholars. However, it is important to note that this is not a return but rather a reversal, because this time is intentional. Universities are not embedded in the cities by default, but because they are self-aware and choosing to be open, to co-create, to make knowledge circulate. Maybe the university, with its roots in the Latin word *universitas* (whole/ community), is finally catching up to itself.

# 1 Foundations for the Future:

## Scaling up City-Science Collaboration across Europe

Peter van der Maas<sup>1</sup> and Pietro Reviglio<sup>2</sup>

<sup>1</sup>City of Amsterdam | <sup>2</sup>Eurocities

### Introduction

European cities are on the front line of today's most pressing challenges. From the climate emergency, biodiversity loss and energy transition to housing shortages, digital transformation, demographic change and social inequality, urban areas concentrate both the problems and the opportunities of our age. These are often described as "wicked problems": interconnected, difficult to define, and constantly evolving.

Most politicians and policymakers in large European cities will agree on the objectives, for example, that we need to prepare for climate adaptation or tackle the epidemic of obesity in European cities. However, developing concrete action plans may prove challenging. For example, how to lead an energy transition with very limited resources, when you do not own the soil, nor the buildings? How to create innovative partnerships, while you do not understand the business model to use heat from datacentres? And, very importantly, how to change the behaviour of the people?

Addressing such questions requires new forms of governance and collaboration. No single department, government or organisation can manage them alone. Municipal administrations increasingly need external expertise to design innovative solutions, evaluate their impact and target resources effectively, particularly in a context of shrinking budgets and rising citizen expectations.

At the same time, universities and research institutions face growing pressure to demonstrate the public value of their work. A rising share of funding now depends on visible contributions to society. Applied research, co-creation with stakeholders and practical outcomes have become central to how institutions are assessed.

This convergence of needs makes cities natural laboratories of innovation. They are close to citizens, able to pilot policies in real-world contexts, and agile in adapting solutions. When cities and universities work together, evidence-based policies can be tested, evaluated and scaled with direct benefits for communities.

It is in this context that the City Science Initiative (CSI) emerged. First developed by the City of Amsterdam, CSI builds on the recognition that cities are uniquely placed to bridge science and policy. It complements European Union and national efforts to promote evidence-based policymaking while extending the science-for-policy agenda to include co-creation with local actors.

Since its launch in 2019, CSI has grown into a transnational network linking city governments, universities and other research organisations. It has supported projects on climate adaptation, digital rights, mobility and citizen science. Crucially, it has positioned city-science collaboration not only as a technical innovation but also as a political movement, advocating for the role of cities as partners in European research and innovation.

This chapter reviews the foundations and future of CSI. It traces its origins, presents city examples, and outlines the case for scaling up in today's shifting political and social context. It also considers the challenges of declining trust and disinformation and ends with a call to action for strengthening city-science alliances at all levels.

### 1. City-science for urban challenges

The challenges facing European cities are increasingly interdependent. Climate adaptation affects housing, mobility and energy. Digitalisation intersects with social inclusion, public health and labour markets. These adaptive challenges do not lend themselves to linear, sectoral solutions. They demand collaboration across disciplines, continuous learning and the integration of evidence into governance.

Many cities had long worked with universities, but partnerships were often ad hoc, short-term and limited to specific projects. CSI was created to address this gap by establishing more structured connections between research and policy. Inspired by Amsterdam's appointment of a Chief Science Officer, the initiative promoted city-science collaboration as a systematic approach to governance.

The Chief Science Officer model embedded scientific expertise within the city administration itself, ensuring that policies are informed by research and experimentation. Rather than treating science as an external service, Amsterdam recognised it as an internal capability. CSI adopted this principle

CSI builds on the recognition that cities are uniquely placed to bridge science and policy.

and scaled it across Europe, building a network where cities, universities and civic actors could learn from each other.

A key conceptual contribution of CSI is the idea of a “third space”: a collaborative arena where policymakers, researchers and civil society meet on equal terms. Unlike traditional consultations, this space values co-creation, experimentation and reciprocity. It allows cities to test policies while engaging universities in applied research with visible impact.

Several European cities illustrate this approach. Amsterdam not only institutionalised the Chief Science Officer role but also developed [openresearch.amsterdam](#), a digital platform where researchers, policymakers and citizens share ongoing work. Reggio Emilia, a mid-sized Italian city, created a City Science Office as described in its 2024 White Paper, acting as a hub for applied research and citizen engagement. Hamburg built a triple-helix model connecting its Senate Chancellery, the Hamburg Institute of Circular Resources Engineering and private and non-profit partners.

Data-driven collaboration has been central. Amsterdam’s City Rhythm Data Ecology, developed with AMS Institute, Delft, Wageningen and MIT, maps patterns of mobility, energy use and social activity to provide insights for more adaptive planning. In the UK, London’s Research and Policy Partnership and Leeds’ Research Collaboration Framework align municipal priorities with academic agendas and translate research into policy. To be mentioned is the ‘Predictable public transport in Cluj-Napoca’<sup>2</sup> and the ‘Thessaloniki living labs for urban health project’.<sup>3</sup>

Other examples show the breadth of collaboration. Paris uses a dense network of air quality sensors to guide traffic and health policies. Barcelona’s DECODE project pioneered citizen control of data and digital rights. Vienna’s digital twin allows planners to simulate infrastructure development before implementation. Rotterdam has co-created climate resilience strategies such as green roofs and water plazas with local communities.

Taken together, these initiatives show how city-science collaboration is evolving from isolated pilots into systemic governance models. They demonstrate how cities can act as laboratories of innovation, and how universities can anchor their work in practical contexts that benefit society. CSI has been instrumental in amplifying these approaches, promoting place-based, action-oriented research and linking them with European policy frameworks.

2 Predictable public transport in Cluj-Napoca - EIT Urban Mobility.

3 Thessaloniki Action for HeAlth and Wellbeing Living Lab - ENoLL.

While trust in science is declining, while disinformation and scepticism rise, mirroring a broader loss of faith in politics and its ability to solve complex problems, City Science argues that science must support civil servants, as executors of policies, and policy-makers in a variety of city departments by not only offering evidence and best practices, but by working together to shape relevant research questions and methods. This collaboration also includes clearly communicating the impact of policy decisions and scientific findings, helping rebuild trust and improve responses to today’s pressing societal challenges. These concerns are increasingly relevant and are one of the key pillars of future policies

Science, research, and innovation have a critical role to play in tackling these urban challenges. They provide the necessary knowledge, tools, and methodologies to inform and support decision-making at the city level. However, bridging the gap between scientific research and policy implementation remains a significant challenge, due to significant mismatches between local policymakers and academia in terms of incentives, methodologies, timings, resources, and organisational culture<sup>4</sup>.

### Local examples are many folds:

- [Openresearch.amsterdam](#)<sup>5</sup> is a formal collaboration of 32 partners, including universities, the municipality, regional democratic bodies, utilities, and cultural research institutes. As a digital platform, it connects researchers, policymakers, civil servants, and citizens to address the future of the Amsterdam Metropolitan Area. It fosters transparent knowledge sharing across disciplines, creating an open, collaborative space for social and physical challenges.
- In London, the Research and Policy Partnership has been established to bridge local authorities and universities, creating shared research agendas that target pressing challenges such as housing affordability, inequality, and sustainability. In the Greenwich borough in particular, the university and the city are working together within a large international alliance in the EU Action 22139 *Justice for youth language needs: human rights undermined by an invisible disadvantage*<sup>5</sup> in which language, health, social, legal experts and citizens participate. Similarly, Leeds has developed a Research Collaboration Framework with the University of Leeds, aligning academic research with municipal priorities and translating findings into actionable, city-level policies. These strategic approaches are complemented by numerous thematic or domain-specific projects across other cities, which illustrate the breadth of city-science collaboration in Europe.

4 Mulgan, Geoff. (2024). *When Science Meets Power*. Cambridge, UK: Polity Press. ISBN 9781509553068.

5 [openresearch.amsterdam](https://openresearch.amsterdam/en/page/115434/european-city-science-initiative-csi-eu) - [openresearch.amsterdam](https://openresearch.amsterdam/en/page/115434/european-city-science-initiative-csi-eu) HYPERLINK "https://openresearch.amsterdam/en/page/115434/european-city-science-initiative-csi-eu".

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Bridging the gap between scientific research and policy implementation remains a significant challenge, due to significant mismatches between local policymakers and academia.

- The city of Barcelona has created an annual research agenda which then leads to subsidy calls to which universities researchers can apply. Vienna's development of a digital twin provides a virtual model of the city's infrastructure and development plans, aims to allow planners and researchers to simulate and test urban strategies before implementation. In Rotterdam, city authorities have worked hand in hand with academic experts and local communities to co-create climate resilience strategies, such as green roofs and water plazas, that address flood risks while improving quality of life.

## 2. The City Science Initiative

The City of Amsterdam, together with the DG Research & Innovation and the JRC of the European Commission, founded the City Science Initiative in 2019. In 2019, Professor dr. Caroline Nevejan, Chief Science Officer of Amsterdam (2017 – 2025), initiated the City Science Initiative and chaired it until 2025. The Eurocities association has been coordinating many projects and other research rooted consortia and organizations such as Unica or Aurora have become active allies along the way.

The City Science Initiative (CSI) serves as a strategic platform aimed at reinforcing cooperation between cities and their networks, urban policy experts, and the services of the European Commission to enhance evidence-based decision-making and urban policy development<sup>6</sup>.

The City Science Initiative is a dynamic, self-organizing “third space” where cities, networks, and various Directorates-General (DGs) of the EU Commission collaborate to explore research solutions for urban challenges. This unique setting encourages reflection, open dialogue, enabling participants to share both successes and setbacks, fostering a rich learning environment built on shared insights and experiences.

The ambition is to advocate for the integration of science into urban policymaking at all levels of government. At the EU level, the CSI promotes a culture of experimentation and evidence-based policymaking through EU funding programmes, calling for support to build local government capacity as science-driven policy catalysts. At the national level, the CSI has the ambition to inspire and help cities advocate for a city-science dialogue with national authorities and associations of local authorities and universities. At the city level, it is also about empowering civil servants and researchers in universities with tools and guidance to advocate for a structured city-science interface within local administrations, engaging both politicians and

<sup>6</sup> Nevejan, C. (Ed.). (2020). *Science, Cities and the Future of Europe*. European Commission, DG Research & Innovation (DG RTD) and Joint Research Centre (JRC), City of Amsterdam.

universities in the process to build together a local knowledge infrastructure<sup>7</sup>.

By working together on a structural basis, resilience for tackling crises increases significantly. Alliances with the private sector and the civic sector are crucial for building such resilience and new ways of working need to be developed for such a transdisciplinary approach to the challenges cities face<sup>8</sup>.

### *Objectives and vision of the City Science Initiative*

The key objectives of this initiative include:

#### **I - Bringing together urban science and policy professionals on a trans-local European scale**

One of the primary goals of the initiative is to connect professionals across European cities who work at the intersection of science and urban policymaking. These individuals, often referred to as City Science Officers (CSOs), play a crucial role in ensuring that scientific knowledge and research findings are integrated into municipal governance and policy design. By creating a European network of CSOs, the initiative aims to facilitate knowledge-sharing, collaboration, and the exchange of best practices across cities. The roles of the CSO vary within the CSI network. In some instances, CSO's are affiliated with knowledge institutions, while in others, they are associated with urban authorities. This network acts as a collaborative forum where cities can share experiences, innovative practices, and research-driven solutions. It also facilitates peer-to-peer learning and cooperation across different levels of government, research institutions, and urban policy stakeholders. Strengthening this network will help cities become more resilient, adaptive, and forward-thinking in addressing their specific challenges. At the same time, city science collaboration can help universities demonstrate their societal impact, show their public value and contribution to society. Since 2024, academic networks like UNICA (Universities from the Capitals of Europe) and the AURORA University Network are affiliated with the CSI network. Researchers from these organizations, particularly those with a multidisciplinary focus, actively contribute to the CSI network.

City science collaboration can help universities demonstrate their societal impact, show their public value and contribution to society.

#### **II - Integrating research, science, and innovation for local challenges**

Urban challenges are diverse and often complex, requiring multidisciplinary solutions. The initiative seeks to explore how scientific research, innovation,

<sup>7</sup> Nevejan, C. (Ed.). (2021). *City Science for Urban Challenges: Towards a European Approach*. City of Amsterdam / Chief Science Office. Supported by the European Commission, DG RTD and JRC. ISBN 9789083041863.

<sup>8</sup> Nevejan, C., Iaione, C.F., Bamidis, P., Goilo, J., Mantziari, D., Wupperfeld, F., & Gardiner, M. (2024). *Social Impact for Climate Justice: An exploration of City Science and the new ESG/CSRD frameworks for evidence-based investments and local policymaking* (1st ed.). Chief Science Office, City of Amsterdam. ISBN 978-90-903853-6-5. Creative Commons Attribution-ShareAlike 4.0 International.

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and data-driven approaches can be leveraged to address key urban issues such as air quality, smart mobility, sustainable energy use, and digital governance. Through collaboration with leading academic institutions, technology experts, and research organizations, the initiative encourages cities to incorporate innovative solutions into their local governance frameworks, to give socially solutions based on scientific research.

As part of this effort, the initiative has explored, for example, how to accelerate climate adaptation in cities. Many cities which are engaged in the CSI, also engaged with the European Mission for Smart and Climate Neutral Cities<sup>9</sup>. Since the beginning in 2019, CSI has supported several exploratory projects aimed at equipping local governments with the tools and knowledge needed to address climate impacts. Recognising that municipal structures are often geared towards service delivery rather than innovation, these projects helped bridge that gap by promoting new forms of collaboration and research.

### III - Fostering dialogue on science-informed policy solutions

Creating a structured platform for reflection is essential for integrating scientific knowledge into city governance. The CSI promotes open discussions and knowledge-sharing among policymakers, executors of policies, scientists, urban planners, and other stakeholders. By engaging in regular dialogue, cities can identify new ways in which science can contribute to solving pressing urban problems and develop tailored strategies for evidence-based decision-making. The ambition is to stimulate a transnational dialogue as well as inspire dialogue at the level of cities to accelerate and experiment new solutions.

### IV - Understanding the needs and priorities of cities in evidence-based policymaking

Every city has unique challenges and priorities, which makes it essential to understand the specific needs of urban policy executors regarding evidence-based decision-making. The initiative seeks to gather insights into the types of scientific data, technological tools, and policy support that cities require to enhance their governance models. By doing so, it can help tailor research and innovation efforts to better align with the practical needs of urban policy executors, and to support cities and academia to better work together and accelerate the city science interface through tailored capacity building support.

### V - Strengthening Connections with related initiatives

CSI operates not in isolation but as part of a broader ecosystem, actively fostering linkages with related projects, networks, and EU-funded

<sup>9</sup> Home - NetZeroCities.

initiatives focused on urban sustainability, digital transformation, and data-driven development. By aligning with these efforts, cities can leverage complementary resources, expertise, and collaborative opportunities, enhancing their capacity to implement innovative, science-driven policies.

In addition, CSI plays a key role in promoting diverse methodologies and research agendas at the EU level. The CSI group has actively contributed to shaping the research and innovation (R&I) landscape by advising on methodologies that address the real needs of cities on the ground. The initiative continues to push for new research methodologies, experimentation, and evaluation frameworks, particularly within the Horizon Europe programme, ensuring that the EC Research & Innovation efforts are aligned with the practical realities faced by cities.

### VI - Trust in Governments: Fighting Disinformation and Strengthening Evidence-Based Policies

Trust is a cornerstone of social cohesion and effective governance. While public discourse often focuses on the importance of trust between citizens and government, research reveals that trust between policymakers and public officials is also a critical issue<sup>10</sup>. Without mutual confidence among those in leadership positions, collaboration breaks down, decisions become fragmented, and public policy loses coherence. In complex urban environments where multiple actors must work across sectors and scales, strong interpersonal and inter-institutional trust enables alignment, joint problem-solving, and resilience. Fostering this internal trust is essential for building stable governance structures capable of addressing today's multifaceted societal challenges. Hierarchical structures within (city) governance can hinder trust, as rigid top-down systems often discourage open dialogue. Silence is rarely penalized, which fosters caution over collaboration and obstructs collective learning and innovation. Trust in government has become increasingly fragile across the world including Europe, eroded by the rise of fake news, disinformation campaigns, and growing scepticism towards public institutions. Cities, as the level of government closest to people's daily lives, are often on the front line of this crisis of confidence. Disinformation tends to focus on highly visible urban policies, where a lack of clear communication or credible data can quickly turn technical decisions into polarising debates. Lack of insight into the process, potential for critical feedback and response to this feedback are also crucial in the crisis of trust; as well as the loss of a shared platform for public debates and media fragmentation<sup>11</sup>.

<sup>10</sup> Handbook on Trust in Public Governance, Elgar Handbooks in Public Administration and Management, Frédérique Six, Joseph A. Hamm, Dominika Latusek, Esther van Zimmeren and Koen Verhoest. Edward Elgar Publishing, Cheltenham, 2025.

<sup>11</sup> Andre Sobczak, Secretary-General Eurocities, <https://eurocities.eu/latest/cities-take-the-lead-to-strengthen-democracy-and-innovation>.

CSI plays a key role in promoting diverse methodologies and research agendas at the EU level.

Since the beginning in 2019, CSI has supported several exploratory projects aimed at equipping local governments with the tools and knowledge needed to address climate impacts.

Every city has unique challenges and priorities, which makes it essential to understand the specific needs of urban policy executors regarding evidence-based decision-making.

#### 4. Collaborations in the CSI – 2019- 2025

The City Science approach has already led to important initiatives in many cities across Europe. A number of significant examples include:

The first CSI report featured pilots in 2019 in Paris (air quality)<sup>12</sup>, Hamburg (circular economy)<sup>13</sup>, Thessaloniki (mental health)<sup>14</sup>, Cluj-Napoca (urban mobility)<sup>15</sup>, and Reggio Emilia (tech and the city)<sup>16</sup>, demonstrating city-driven collaboration, experimentation, and knowledge infrastructures for tackling diverse urban challenges.<sup>17</sup>

In 2023 – 2024 in two physical and four online conferences, the CSI explored how the business and the civil society can participate in City science. Also in 2022-2023 student workshops were initiated for university students from across Europe in collaboration with city officials. They explored urban challenges—like mobility, climate adaptation, and digital inclusion—through co-design methods. The workshop emphasized youth perspectives, creativity, and experimentation, showing how students can enrich policymaking and strengthen sustainable city knowledge infrastructures.<sup>18</sup>

In 2022 - 2023 an important initiative was established of exchange of PhDs between City Science Officers in Amsterdam and Reggio Emilia. Further collaboration between a variety of CSI cities has led to joint research calls, shared workshops, and collaborative conferences, strengthening cross-city knowledge networks and advancing evidence-based policymaking for urban challenges.

<sup>12</sup> Accueil Airparif | Airparif.

<sup>13</sup> Institute — HiiCCE.

<sup>14</sup> Thessaloniki explored, as a CSI pilot, how cities can address mental health as a key urban challenge. The project focused on youth wellbeing, stress in urban environments, and the role of culture in resilience. By linking policymakers, researchers, and citizens, Thessaloniki developed new approaches to embed mental health in local policy.

<sup>15</sup> As a CSI pilot, Cluj-Napoca focused on sustainable urban mobility as a driver for inclusive growth and better quality of life. The project experimented with data-driven planning and citizen engagement to design smarter transport solutions. By linking universities, city government, and communities, Cluj created pathways for evidence-based mobility policies.

<sup>16</sup> Reggio Emilia explored, as a CSI pilot, how digital technologies can transform urban life and governance. The project focused on citizen participation, smart city tools, and ethical use of data. By integrating technology with cultural and social innovation, Reggio Emilia demonstrated how tech can strengthen inclusive and sustainable urban development.

<sup>17</sup> Nevejan, C. (Ed.). (2020). *Science, Cities and the Future of Europe*. European Commission, Directorate-General for Research and Innovation (DG RTD) & Joint Research Centre (JRC). City of Amsterdam.

<sup>18</sup> Nevejan, C., Iaione, C.F., Bamidis, P., Goilo, J., Mantziari, D., Wupperfeld, F., & Gardiner, M. (2024). *Social Impact for Climate Justice: An exploration of City Science and the new ESG/CSRD frameworks for evidence-based investments and local policymaking* (1st ed.). Chief Science Office, City of Amsterdam. ISBN 978-90-903853-6-5. Creative Commons Attribution-ShareAlike 4.0 International.

Collaboration between a variety of CSI cities has led to joint research calls, shared workshops, and collaborative conferences, strengthening cross-city knowledge networks.

#### 5. From objectives to formal consolidation: Building a stronger, more political City Science Initiative

In its first years, CSI concentrated on building a community of practice. It brought together science officers, innovation managers, data scientists and planners from across Europe, creating a professional network for exchange and learning. Through workshops, peer sessions and pilot projects, practitioners tested new ideas and refined methodologies.

Projects on climate adaptation, data governance and mobility gave cities opportunities to evaluate approaches and demonstrate the benefits of scientific expertise. CSI also supported administrations in navigating EU research programmes such as Horizon Europe, enabling cities with limited capacity to access partnerships and funding.

The initiative promoted a model of policymaking that is place-based, action-oriented and committed to open science. It encouraged transparency and accountability in the use of data and research. Importantly, it also addressed the barriers to data exchange that hinder collaboration. Fragmented systems, unclear responsibilities and strict regulations often prevent institutions from sharing information. CSI helped cities and universities develop ethical, interoperable ecosystems that allow data to flow across sectors while safeguarding public value.

These achievements laid important foundations, but the growing complexity of urban challenges now demands consolidation. CSI must evolve into a more visible and influential platform, capable of scaling successful practices across Europe and connecting with broader research networks. Beyond technical cooperation, it should embrace a more political role, actively advocating for cities as strategic actors in shaping national and EU research agendas.

Consolidation requires moving from ad hoc projects to structured mechanisms that embed science-policy interfaces in governance. It means expanding partnerships, developing a unified voice for advocacy, and pressing for dedicated funding instruments to support long-term collaboration. It also calls for continued investment in capacity-building and common methodologies, while widening collaboration with civil society, start-ups and cultural institutions. Aligning with EU green, digital and social priorities will position CSI as an enabler of mission-driven transitions.

The achievements of Amsterdam, Reggio Emilia, Thessaloniki, Cluj, Hamburg, London and Leeds show what structured collaboration can deliver. The challenge now is to replicate and scale these practices more widely. Mechanisms for peer-to-peer learning, transnational clusters focusing on shared priorities, and stronger links with EU Missions and Horizon Europe will be critical.

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Equally important is advocacy. CSI needs to develop a clear narrative about why city-science interfaces matter, not only as tools for policy improvement but as vehicles for rebuilding trust, reinforcing democratic legitimacy and demonstrating the societal value of universities. In an era of geopolitical instability, economic uncertainty, climate emergencies and rising disinformation, this role is more urgent than ever. CSI can help cities respond effectively and inclusively to shocks while maintaining long-term goals. By fostering collaboration, transparency and open communication, it acts as a stabilising force, connecting local innovation with European resources and strengthening resilience.

## 6 – An evolving context: Why scaling up is imperative

The broader context for city-science collaboration is changing rapidly. Across Europe, trust in science and government has been weakened by disinformation, polarisation and perceptions that institutions cannot provide effective responses to crises. Citizens are sceptical about whether experts and policymakers can deliver solutions to urgent problems such as climate change, pandemics, housing or inequality. Civil servants, who need to execute the political decided policy briefs, often lack the insight, the data and the tools to handle the emerging urban crises. From the epidemic of obesity to urban heat, from mental health to eroding local cultural heritage, urban challenges cause the need to invent new methodologies that offer solution in a context of very limited means and struggling participatory contexts to survive.

Universities are under heightened scrutiny, asked to prove their societal value while facing budget pressures and political oversight. National research agendas often focus on industrial competitiveness or large-scale technological projects, with little attention to how innovations will be embedded in local governance. At the same time, municipal governments are asked to achieve more with fewer resources. Shrinking budgets, combined with rising expectations, place administrations under immense strain.

In this environment, cities are emerging as laboratories of governance. Their proximity to citizens and operational agility allow them to test policies, adapt quickly and refine solutions in real time. By collaborating with universities, they can bridge expertise gaps and deliver measurable outcomes, whether reducing air pollution, improving public health, enhancing safety or adapting to climate risks.

Rebuilding trust requires more than communication strategies: it demands visible results. When citizens see that scientific expertise leads to cleaner air, safer streets or more resilient neighbourhoods, confidence in both science and government is restored. Partnerships have already delivered air-quality plans, innovative mobility pilots and climate resilience strategies with tangible

Across Europe, trust in science and government has been weakened by disinformation, polarisation and perceptions that institutions cannot provide effective responses to crises.

benefits. By involving residents in research, sharing open data and explaining the evidence behind decisions, cities can strengthen credibility and transparency.

This context highlights the need to scale up. City-science collaboration cannot remain limited to pioneers or isolated projects. It must become a systemic feature of governance across Europe. A renewed alliance is needed between cities, universities and higher levels of government, backed by funding, capacity-building and political recognition. These collaborations are not only technical arrangements but political statements about the type of governance Europe needs: transparent, participatory and evidence-driven.

Openness and inclusiveness are essential. Open science and open data are democratic imperatives. Living labs and applied research projects bring students and communities directly into innovation, giving them ownership of their cities' future. At the same time, local knowledge and lived experience are vital. Cities that cultivate long-term partnerships with communities and knowledge actors are better prepared for crises, as seen during COVID-19 and climate emergencies.

Finally, challenges increasingly transcend borders. Climate change, migration, digitalisation and economic disruption require collective responses. Interactive platforms, shared data ecosystems and real-time collaborative tools are needed so cities, researchers and policymakers can learn and act together. CSI has a vital role in promoting these new forms of cooperation, ensuring governance structures can address the messy realities of the 21st century.

## 7 – Trust, disinformation and evidence-based governance

Trust is a cornerstone of governance. Without confidence among policymakers, officials and citizens, collaboration falters and policies lose legitimacy. Yet trust has become fragile in Europe, eroded by disinformation and conspiracy theories. Cities, being closest to daily life, are often on the frontline.

Disinformation typically targets visible urban policies. The debate around the "15-minute city" is a clear example. Conspiracy narratives falsely claimed that authorities aimed to restrict free movement, when in reality the concept is about accessibility and quality of life. Distorted narratives make constructive dialogue on urban planning more difficult.

Other policy areas face similar challenges. Measures to reduce speed limits in Bologna or redesign streets in Amsterdam have been labelled anti-car policies, despite clear evidence that they save lives without increasing average travel times. Migration debates are clouded by myths that migrants

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Open science and open data are democratic imperatives. Local knowledge and lived experience are vital.

Representation matters as much as funding. Cities must have a formal seat when European research agendas are designed, especially on issues that shape urban life.

drain services, even though they often fill labour shortages and contribute economically. Housing policies to expand social housing are misrepresented as “anti-market,” despite being crucial for affordability.

These narratives polarise communities, delegitimise evidence and slow down needed reforms. Cities need strong communication and robust evidence to respond. Yet many administrations lack the resources to monitor disinformation, counter false claims and translate research into accessible messages.

City-science collaboration can fill this gap. Partnerships with universities help cities collect data, measure impacts and communicate results. Evidence of accidents prevented, emissions reduced or health benefits gained provides a credible base for communication. Involving students and residents in data collection makes knowledge relatable and trusted.

The Eurocities Pulse Mayors Survey 2024 shows that mayors prioritise innovation in data use, participation and co-creation. Their top challenges—housing, climate change, mobility and inclusion—are precisely where misinformation is most likely to spread. City-science collaboration equips mayors with tools to test, evaluate and scale policies that are both effective and legitimate.

Ultimately, the link between innovation, citizen engagement and evidence-based governance is critical. In a turbulent landscape of misinformation, these collaborations enable cities to design better policies while rebuilding public trust in institutions.

## 8 – Advocating for city-science collaboration at all levels

City-science collaboration has proven its potential. But to evolve from pioneering local initiatives into systemic transformation, stronger political commitment is needed at every level of governance. Cities and universities cannot achieve this alone. National governments and the EU must sustain, scale and mainstream these approaches.

At the local level, cities must embed collaboration in long-term strategies. Pioneers such as Amsterdam with its Chief Science Officer or Reggio Emilia with its City Science Office show what is possible, but many municipalities lack the resources to institutionalise science in policymaking. Structured frameworks are needed to move beyond isolated projects. Political leadership is crucial: mayors can commit to evidence-based governance, while universities can deliver applied research that benefits communities and provides students with practical experience.

At the national level, research agendas should no longer operate separately from local needs. Municipalities are where many challenges are most acute,

For CSI to evolve from pioneering local initiatives into systemic transformation, stronger political commitment is needed at every level of governance.

yet they are often overlooked in national strategies. Governments should establish funding mechanisms that encourage city-university collaborations, support pilot projects and build frameworks for long-term cooperation. Co-created programmes where municipalities, universities and national institutions jointly set priorities can root research in real-world challenges. Learning networks connecting cities across regions can ensure innovation spreads beyond well-resourced municipalities.

At the European level, the case for action is even stronger. Current frameworks such as Horizon Europe remain fragmented and overly prescriptive, often prioritising industrial competitiveness over local experimentation. CSI has shown the value of a European platform dedicated to city-science collaboration. Building on this, the EU should establish a permanent learning network linking pioneers with those building capacity. Funding must be substantial: Eurocities has called for the European Urban Initiative innovation strand to be scaled to at least €1 billion, and for the creation of an urban innovation window within the Competitiveness Fund. Urban Innovation Hubs across Europe could provide platforms where experimentation, research and entrepreneurship come together.

Representation matters as much as funding. Cities must have a formal seat when European research agendas are designed, especially on issues that shape urban life. Strengthening services such as the Joint Research Centre and ESPON would help align research with city realities. Platforms such as the Urban Data Platform should be enhanced to monitor urban developments and support evidence-based policymaking.

Alignment between local, national and European actors is crucial. Without it, city-science collaboration risks fragmentation. With it, urban innovation can drive Europe’s green and digital transitions while reinforcing democratic legitimacy.

## 9. Conclusion and call to action

European cities are on the frontline of climate change, housing crises, digitalisation and social inequalities. Incremental adjustments are no longer enough. New governance models are needed that integrate science, foster innovation and involve citizens in shaping inclusive solutions.

The City Science Initiative has shown the potential of this approach. By connecting cities with research institutions and fostering peer learning, CSI has demonstrated how science can be embedded in administrations. It has shown that experimentation, guided by evidence and co-created with local actors, leads to more effective and widely supported policies. Now is the time to move from pilots to systemic change. Cities must institutionalise science-policy interfaces, strengthen partnerships with universities and advocate collectively for supportive frameworks. National

By connecting cities with research institutions and fostering peer learning, CSI has demonstrated how science can be embedded in administrations.

governments and the EU must recognise cities as testing grounds for solutions and provide sustained support.

The future of Europe's cities depends on integrating science, policy and civic engagement into coherent models of governance. CSI provides a blueprint. The challenge ahead is to scale up, involve more cities and universities, and ensure that collaborations are politically recognised and sustainably resourced.

As Europe enters a new political cycle, city-science collaboration must be placed at the heart of its innovation and sustainability agenda. By doing so, cities can lead in showing how evidence-based policymaking, grounded in openness and inclusivity, can build resilient, equitable and future-ready communities. The task is clear: to turn this vision into a movement, backed by political will and shared commitment, capable of shaping a better future for all Europeans.

The future of Europe's cities depends on integrating science, policy and civic engagement into coherent models of governance.



CSI meeting in Amsterdam, 2024

Pietro Reviglio  
EUROCITIES

## Milan

### Case Study – Politecnico di Milano's CRAFT: Planting the Seeds of City Science in Italy

Across Europe, cities face urgent challenges—climate risks, housing shortages, social inequalities, digital transformation—that demand research-informed solutions. Yet structures connecting academic expertise with local governance remain weak in many countries. Dedicated city–science centres are needed as strategic infrastructure: places where universities actively support public administrations, strengthen capacity, and align research with everyday governance.

This is the ambition behind the *Center of Competence for Anti-Fragile Territories* (CRAFT) at Politecnico di Milano (Polimi). Established within the Department of Architecture and Urban Studies (DASTU) under Italy's *Departments of Excellence 2023–2027* programme, CRAFT is a hub where research, design, and governance meet. Its mission is to help cities and regions confront fragility in territories, institutions, and urban systems—transforming uncertainty into opportunities for adaptation and growth.

Inspired by the European *City Science Initiative* (CSI), CRAFT goes beyond resilience. The idea of *anti-fragility* stresses that territories

can emerge stronger from shocks if the right conditions are in place. Designed as a science-for-policy hub, CRAFT's purpose is not only to generate knowledge but to equip administrations with tools and capacity to act.

#### Closing the gap in Italy

While Italian cities like Milan are leaders in design and innovation, structured partnerships between municipalities and universities remain fragmented. Milan does not yet have a city science office like Amsterdam or Reggio Emilia. Collaboration is mostly project-based—on digital transformation, climate, or mobility—without a shared framework or strategy.

CRAFT is stepping into this gap as a catalyst. Its first task has been to map ongoing initiatives, creating a clearer picture of where academic knowledge could better support public policy. In doing so, Polimi is opening a new conversation: What would a Milanese model of city–science collaboration look like?

#### Functions and an explorative agenda for city-science interfaces

CRAFT combines research with practice through four functions: developing pilot projects and tools for administrations, fostering debate on territorial

transformation, delivering advanced education, and building collaborations with national and international partners. All are designed to enhance the capacity of public institutions.

Its exploratory agenda is already taking shape. A research fellowship will study European models such as Amsterdam's Chief Science Officer and Hamburg's triple helix partnerships, with lessons adapted to Italy. A pilot seminar with municipalities, academics, and practitioners will test whether a national framework for city–science collaboration could emerge.

Education is central. An Honours Programme will immerse master's students in real-world challenges, linking them with administrations and arranging study visits to CSI cities. Feasibility studies for Italian municipalities will be developed in parallel, while an online and in-person training track is being designed to extend benefits directly to practitioners.

#### Linking local to European: An agenda for support

Beyond Milan, CRAFT is engaging with ANCI (National Association of Italian Municipalities) to build a wider network of cities interested in CSI principles. At the European level, Polimi's strategic partnership with Eurocities and CSI ensures that local experiments



contribute to the broader movement for evidence-based policymaking.

CRAFT is still in its early stages: more catalyst than finished model. Yet its mission is clear—to provide public administrations with research, tools, and training to govern complexity more effectively. By combining education, experimentation, and dialogue, it wants building the enabling conditions for city–science collaboration in Italy. Scaling this approach requires recognition and support. National and European institutions must

create funding streams, governance frameworks, and training opportunities that enable universities to work systematically with cities. CRAFT demonstrates how collaboration can start locally, but it also argues for scaling up: dedicated city–science centres should be seen as vital capacity-building infrastructure, on a par with climate or digital investments.

By linking local experimentation to national dialogue and European advocacy, Milan is planting seeds for a new generation of city–

science partnerships. Supporting these seeds to grow is essential for equipping public administrations with the knowledge and capacity to deliver resilient, forward-looking governance across Europe.

# 2 Rethinking the Trading Zone:

Imagination and Care in Cities —  
A Dialogue between Caroline Nevejan<sup>1</sup> and Valeria Fedeli<sup>2</sup>

<sup>1</sup>[www.nevejan.org](http://www.nevejan.org) | <sup>2</sup>Politecnico di Milano

In a world where the production of knowledge is more strategic than ever, scientific knowledge gets increasingly specialised as well as controversial for the wider public.

Valeria: In a world where the production of knowledge is more strategic than ever, scientific knowledge gets increasingly specialised as well as controversial for the wider public. While we assign science a crucial value, at the same time the complexity of problems to be faced, the awareness of the “unknown unknown” makes it decreasingly consensual and more open the relationship with science and knowledge production, as the covid 19 pandemic has recently shown, or climate change debate is highlighting. It is in cities, where urgent challenges have to be faced, that this complex relationship with science becomes as crucial: cities need competences and knowledge to deal with societal challenges, yet they also need to build consensus and agreement on what should be done, on how to define problems and how to deal with them. Do cities have a role in making a better relationship between society and science, by feeding a new dialogue between different forms of knowledge production and the sphere of practice and policy initiatives able to impact on the quality of everyday life. As a scholar in the field of urban policies and scientific director of Craft, the Competence Center Antifragile Territories, of my Department (Department of Architecture and Urban Studies, Politecnico di Milano), working for and with cities, I am particularly interested in what you have done as City Science Officer in Amsterdam. You were a civil servant with the City of Amsterdam and at the same time you were a professor by special appointment at the University of Amsterdam How did you contribute to building this common ground between cities and sciences?

Caroline: When I served as Chief Science Officer of Amsterdam and professor at the University of Amsterdam, I had one foot in academia and the other in city government. Before that, I spent 25 years as a cultural entrepreneur, and after completing my dissertation on *Presence and the Design of Trust*, I worked at Delft University of Technology.

My path has never been confined to one discipline — I’ve always moved between the humanities, social sciences, and natural sciences, believing that change is, above all, a cultural process. Looking back over my career, I realize I’ve always lived between worlds — between science and policy, art and technology, culture and engineering.

The world I grew up in was already shifting. Decolonization movements were reshaping global politics, and the digital revolution was beginning. As a teenager in the 1970s, I read *The Limits to Growth* and felt the urgency of its message. Later in 1989, I organized the first Galactic Hacker Party in Paradiso Amsterdam. We showed the world that the Internet could pierce borders, carrying live news from apartheid South Africa, Nicaragua, and go through the walls of the iron curtain with the Soviet Union. That experience revealed something that has stayed with me ever since: when people come together around urgent questions and share their vital knowledge, that what you need to know to be well and survive, change becomes real. Imagination starts to flourish and walls can come down. Entire systems can shift. As a Chief Science Officer of the City of Amsterdam, I brought people together people with different kinds of knowledge, around questions they could share.

And yet, today, I often meet young scholars and civil servants who no longer believe change is possible. They see only obstacles and feel paralyzed. In Amsterdam, for example, the electricity grid is full and as a result new companies can’t connect. Children are suffering from obesity because food has become a speculative market. These are the legacies of decades of easy money and short-term choices. But I know things can be different — because I’ve seen them change before. You have to dare to share and engage and commit to each other to make it work.

When I began working with the city, I listened to the civil servants in the first place — the ones grappling daily with broken bridges, failing infrastructure, children with serious issues and the direct impacts of climate change. What they needed was research for new solutions that addressed the realities they faced. Too often, academic “solutions” didn’t fit the real world, often because the right questions hadn’t been asked and the knowledge and imagination of people who are at the heart of the issue at hand, were overlooked.

That’s why I’ve always pushed for collaboration across boundaries. Professors, students, engineers, companies, and residents each bring something different. The richness lies in the differences — but only if people are willing to share, to listen, and to stay open to learning. It’s not easy work. It takes humility, patience, and the courage to remain on ‘uncommon ground’. But when it works, it’s powerful.

I’ve seen this, for example, in the Energy Lab Zuid Oost, where researchers, civil servants, and residents come together each week, reshaping questions as they go. Students are also energy coaches for the residents, helping to

When people come together around urgent questions and share their vital knowledge, change becomes real.

You have to dare to share and commit to each other to make it work.

Professors, students, engineers, companies, and residents each bring something different. The richness lies in the differences — but only if people are willing to share, to listen, and to stay open to learning. It takes humility, patience, and the courage to remain on ‘uncommon ground’.

make their homes more energy efficient and bring the energy bills down. At the same time, the students learn to do research that is grounded in quality of daily life. This approach has already attracted considerable research funding now. They document all steps of their process on <http://openresearch.amsterdam> and, as a result, they build upon each other's experiences and newcomers can participate.

To me, the lesson is simple: change begins when people come together with generosity, document their progress, and refuse to give up on the belief that a better future is possible. I have experienced that the most important questions — the real research questions — come from the people on the ground who face the problems directly. It's the youth nurse, it's the engineer, the traffic control managers, the schoolteacher and the police officer on the street. These are the people who encounter the complexity firsthand. They are the ones who carry the real, urgent, unresolved questions. And that's where the most meaningful research questions emerge.

**Valeria:** [Caroline, what is the role of politicians in your work?](#)

**Caroline:** Politicians play a vital role. We elect them, and they are the ones who must ultimately make the impossible trade-offs — for example, choosing between investing in children's education or fixing traffic infrastructure. These are not easy decisions. My work was to ensure that politicians have good options on the table. That there are real, thoughtful, viable solutions available for them to choose from. I collaborated with civil servants, many of whom are very skilled at translating complex research into political language — into something politicians can work with.

As Chief Science Officer, I saw it as essential that my position was independent — both from the university and from the municipality. I was engaged with both institutions, also in a hierarchical sense, but I wasn't owned by either. That independence was crucial. It wasn't always easy — I often found myself facing resistance. You need to be able to stand firm in headwinds. Autonomy matters. You must be willing to speak truth to power — whether that's within a university or a municipal office. We can all agree on a mission of for example no more obese children. But how do we get there? Do we confront the food industry? Do we medicalise the problem? Do we invest in sports fields? Or change school lunches? These are all choices. And these decisions fall to the democratically chosen politicians. Our role — as scientists and civil servants — is to ensure they have those choices, that there is a robust, evidence-based foundation for every option placed on the table.

**Valeria:** [The concept of trading zones was introduced by Peter Galison, in the sphere of history and philosophy of science, to explain how different scientific communities, with different languages, thesis and methodologies collaborate and engage in productive exchanges despite significant conceptual, cultural,](#)

[The most important questions — the real research questions — come from the people on the ground who face the problems directly.](#)

[Our role — as scientists and civil servants — is to ensure politicians have choices, that there is a robust, evidence-based foundation for every option placed on the table.](#)

or technical barriers. By studying such kind of processes, Galison formulates the hypothesis that even without a deep understanding of each other's theories and methods, just as merchants can exchange goods without deeper mutual understanding, scientific communities exchange knowledge and techniques, establishing points of overlap that allow for productive interaction and finding practical ways to communicate through a shared language or set of symbols. Within a trading zone, the groups involved may not come to a mutual understanding on all issues, but they negotiate meaning and establish common ground.

[Can this metaphor of trading be inspirational to the CSI initiative, when trying to explain the kind of effort that cities can play to generate such enabling conditions within multicultural and heterogenous environments?](#)

**Caroline:** When you introduced Peter Galison's concept of the "trading zone" during our discussions at the City Science Initiative, it resonated with me immediately, for two reasons. First, in my own work on presence, I've often argued that both presence and trust are built on trade-offs. You never have complete information before deciding to trust someone — you gather enough, make a choice, and then act. The same goes for presence: we constantly calibrate how we appear through our clothes, our gestures, our words. In that sense, both presence and trust are designed, and both rely on balancing. That's why the "trading zone" spoke to me: it captures the psychology of those small, daily negotiations. Second, the "trading zone" points toward something bigger: coordination. Cities are essentially vast networks of coordination, made up of countless human and non-human actors — people, animals, traffic lights, sensors, even the weather. All of these interactions are partial, contextual trades. I trust my baker to sell me bread, not to treat my bronchitis. I trust the city to maintain the traffic lights so I can cross safely. These are compartmentalized exchanges, small trades that keep the city alive.

And yet, something is missing if we stop there. Cities are not just trading zones — they must also be 'caring zones'. Care is different from trade. Raising a child isn't a transaction. Caring for a neighbour, a street, a tree in winter — these acts cannot be reduced to contracts. They are about attention, protection, love. Without care, cities collapse. Detroit is a stark example: when only trade remained and care disappeared, the city fell apart.

Feminist theory has long insisted that care is fundamental, not optional. It is a life force, present not only in human relationships but also in the wider living world. Care sustains us in ways trade cannot. And cities that prioritise care — through safe streets, playgrounds, public health, hospitality — are the ones where people like to live. Cities can't survive on trade alone. Trust and presence are built on exchanges, yes, but what truly sustains us is care — listening, protecting, holding space. Without care, even the best trading zone eventually breaks down.

[Just as merchants can exchange goods without deeper mutual understanding, scientific communities exchange knowledge and techniques, establishing points of overlap that allow for productive interaction.](#)

[Cities are not just trading zones — they must also be 'caring zones'. Cities that prioritise care are the ones where people like to live.](#)

In practice, creating a caring zone begins with listening. But it also means holding the space — ensuring respect, supporting what people truly need to thrive, from vital information to food and warmth. Even a good market depends on care. It is the fertile soil beneath trade. Without care, there is no survival, no presence, no trust, no trade — and no city.

[Valeria: How to create this \*caring zone\* in practice. You mentioned listening, but maybe there's more to it?](#)

Caroline: It is crucial to understand what is vital for the people involved. What do these persons need to survive? Or to thrive? That is a huge research question. One needs a lot of listening to diverse people for being able to formulate such a third point, such a shared value. Once you understand this, you can design an environment in which the diversity of knowledge participants bring is honoured and used. In a caring environment someone, or different people, hold the space. It is also about good food, pleasant seating, easy moving, thoughtful timing, a warm welcome and clear invitations — people need to know exactly where to go, which train or bus to take. It's about cultural elements that allow people to recognize themselves and others, and feel respected. It is about to imagining new futures together. When mediating different kinds of knowledge, such caring is necessary for otherwise no sharing will happen.

Who is *in the room* is very important. In my dissertation, *Presence and the Design of Trust* — which people can download from Open Research — I call this the '*crucial network*', inspired by Aristotle's *Theatre Rhetorica*. "Everyone who has contributed to creating the current status quo — and everyone who holds the power to change it — must be at the table". When you bring this crucial network together, you are writing history. That's a big ask, and it's not easy. It can be difficult for a resident to speak when being in the same room with the alderman or the mayor, or with a civil servant and a scholar. This requires smart orchestration: people must feel at ease, that they have the right to speak up, and that their voices are truly valued. When all these *parrhesiastes* (from Greek) — those who speak truthfully and courageously — come together, they offer each other the space to speak openly about their knowledge, their imagination, their experiences, their insights, and their feelings. This is about *giving*, not taking — about generosity. When people give to each other in this way, they can really move mountains. And then, working together becomes a true joy.

[Valeria: Plurality is a crucial resource, but we need tools and people that can help producing such dialogues. It is not just about getting people to work side by side, but producing opportunities and resources for successful cross-disciplinary collaboration. Which ingredients have been crucial in orchestrating such your experience?](#)

Caroline: For me, the first requirement of working between science and policymaking was being multilingual. Not in the sense of speaking French

or Chinese, but in speaking the different *disciplinary* languages and speaking the language of different kinds of knowledge. I can move between the alpha, beta gamma disciplines, but I can speak theoretical or practical or artistic knowledge in such fields as well. I do not know how to design a building, but I understand how an architect or a plumber thinks and I need to understand how the civil servants who give the building permission think and realize how a politician can use any of these kinds of knowledges. I can't run the equations of a mathematician, but I can understand what kind of knowledge an equation produces. I don't need to know everything; I just need the courage to ask: *What do you mean? How is it for you?* That last question is especially powerful because it doesn't define the 'it', or anything in advance. For example, once in a meeting on obesity, the youth nurse sat silent while the policy maker and the manager were in conversation. But when I asked her, *How is it for you?*, she finally spoke: "I miss the voice of children here." That openness shifted the whole conversation.

In inter - multi - and transdisciplinary collaborations you have to know how specific knowledge is produced, what counts as evidence in a discipline, and how different fields move from knowledge to application. I have learned that as scholars, we also fall into tunnel visions. During the pandemic, my team combined ethnography with big data to map community rhythms, which we named the 'foam-index'. We thought it was all about COVID. But the public health managers told us we were blinded by our tunnel vision. "This isn't only about Corona." They saw five other applications we had missed entirely. They anticipated this Foam-index is interesting for different kinds of crisis management because it indicates where people like to meet, and there communication and information in times of crises can take place, but also physical distribution of food or phone chargers can be placed for example. The Foam-index is also interesting for managing flows of mass-tourism to protect community life. It can inform mobility plans for shared transport. The foam -index may be used to measure social impact of larger building project developments or inform the public organizations where support and care is extra needed – as in keeping streets more clean for example.

That's why openness — asking questions and taking time to listen — matter so much. Creating shared moments without an agenda, are crucial. Protecting such time creates space to think together — not just execute tasks. Empty time is part of orchestration; without it, imagination suffocates. This is where the concept of *boundary objects* becomes vital. Star and Griesemer gave us this notion, and it remains fundamental for collaborative work. A boundary object—whether a demo, a mock-up, a performance, or a simple sketch—offers something tangible around which people can gather. It allows each participant to respond: *How is it for you?* In doing so, everyone finds their position. Designers are therefore indispensable, because designing a good boundary object is the key to enabling exchange.

Yet, boundary objects need not be complicated. Children turn a chair into a rocket ship or a castle. In the same way, a pen, a ball, or a poem can spark

Who is in the room is very important. "Everyone who has contributed to creating the current status quo — and everyone who holds the power to change it — must be at the table", as Aristotle suggested.

In inter - multi - and transdisciplinary collaborations you have to know how specific knowledge is produced, what counts as evidence in a discipline, and how different fields move from knowledge to application.

dialogue and imagination. But here lies the challenge: our culture increasingly pushes us toward passive consumption, Hollywood-style narratives, and algorithmic feeds. These reduce imagination instead of nurturing it.

Current education often trains students to follow steps, to perform, but not to imagine or disagree. Yet conflict is often the most interesting moment: it shows us where we need to understand better. When students learn experientially, when they are trusted with real responsibility, they grow into professionals who understand the need for care, not just trade knowledge. Universities today often feel like cookie factories. They also need to be caring zones, not only trading zones.

Interdisciplinary work is never easy. It means working with people you don't fully understand, and that discomfort can be exhausting. That's why creating an environment where people *want* to be is essential. A touch of charm, a joke, a cup of tea—or even homemade cookies—can soften the tension. These gestures remind us of our shared humanity. Without them, we risk becoming mechanical, like the very artificial systems we build.

Current education often trains students to follow steps, to perform, but not to imagine or disagree.

The online platform <http://openresearch.amsterdam> that I initiated for sharing knowledge between different disciplines and different kinds of knowledge, aims to trigger such imagination by making sure the knowledge people share is matched with contribution of other who work on the same issue yet form a different perspective. Being confronted with other approaches on the issue one is working on, triggers imagination and distorts the tunnel vision we all easily get trapped in.

What we need are cultural products, classrooms, and forms of governance that invite participation, that make space for imagination to flourish. Collaboration without imagination is empty. And imagination itself is still one of the most mysterious human capacities—barely understood by neuroscience till today, and perhaps best left partly unexplained. Maybe it is in that mystery that the true power of imagination resides: to let us see, plan, and build futures together.

Valeria: Thank you.

What we need are cultural products, classrooms, and forms of governance that invite participation, that make space for imagination to flourish. Collaboration without imagination is empty.



"Sharing is key to collaboration"

# 3 From Insight to Infrastructure:

towards a typology of collaboration formats

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## Introduction

The relationship between researchers and policymakers is neither linear nor fixed. It is a living, evolving ecosystem shaped by the rhythms of urban life, urgency of political cycles, and the evidence-driven reasoning of researchers. Across Europe, this collaboration takes many forms, from short-term consultations on urban data to deeply embedded research partnerships that influence long-term policy. One such example is the PIREN-Seine programme which, for more than 45 years, combined the skills of scientific teams with the needs of local authorities around the Seine river. Historically, these have also been influenced by national research policies, EU frameworks, and the decentralised nature of urban governance. What unites these diverse efforts is a shared recognition that the complex challenges cities face today, from climate adaptation, housing equity, digital inclusion, to public health and education, require knowledge that is not only robust, but responsive. Threaded throughout this chapter is an exploration of the collaborative infrastructure that enables cities and researchers to move from shared interest to shared impact, ultimately seeking to improve the quality of life of citizens. These structures, which we refer to as collaboration formats, shape the very way knowledge is (co)produced, translated, and applied in urban governance.

Importantly, this interface between cities and science is not monolithic, it rather stretches across a versatile spectrum. On one end are high-level strategic alliances where cities and universities co-design agendas and institutional frameworks; on the other, are bottom-up collaborations that mobilise knowledge to support the implementation of specific projects or services. In between lie a myriad of formats: fellowships, co-creation labs, student action-research, joint data platforms. Each reflects a unique confluence of needs, capacities, and institutional cultures. In mapping some of this, this chapter seeks not only to describe the state of the art, but to inspire the next generation of urban knowledge-making: one that is as diverse, dynamic, and deeply human as the cities it aims to serve.

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## 1. City Science Officers: Catalysts for Urban Collaboration

City Science Officers (CSOs) have emerged as essential actors at the heart of urban research-policy collaboration; they are catalysts who traverse the worlds of research, bureaucracy, and politics, mastering these different 'languages'. Far more than intermediaries, they are hybrid professionals whose expertise spans diplomacy, strategic thinking, and technical fluency. Acting as *knowledge brokers or mobilisers* (Meyer, 2010; Ward et al., 2009), they bridge epistemic communities, enabling evidence to flow across institutional boundaries and into the core of urban decision-making, while actively shaping the conditions for co-production and mutual learning (Lomas, 2007).

Whether embedded within city administrations or universities, CSOs function as boundary spanners (Williams, 2002), translating between the cultures of bureaucratic pragmatism and academic inquiry. As matchmakers and interpreters, they align priorities, render complex research into actionable insights, and reformulate policy challenges into researchable questions. In doing so, they uphold both the rigour and relevance of knowledge, a dual imperative essential for impactful, equitable, and inclusive urban governance (Van den Hoven, 2020).

CSOs operate through a range of organisational configurations. Some work as public officers, experts, or researchers in dedicated municipal departments responsible for research relations or urban observatories. In these roles, they coordinate collaboration activities, design frameworks for engagement, identify key urban needs, facilitate access to city data and research sites, and oversee the production of action-oriented outputs (e.g. Magdeburg, City of Paris). Others work within university departments responsible for municipal relations, identifying and mobilising academic expertise while coordinating collaborative deliverables.

Many CSOs extend their roles through participation in living labs, mission-oriented platforms, and long-term research infrastructures that engage municipalities, citizens, and end-users in the design of research agendas, methodologies, and outputs. They may also operate within independent multidisciplinary organisations that mobilise diverse research communities to address societal challenges and broker cooperation between universities, municipalities, charities, and civic actors (e.g. regional IPCCs in several French regions; Centre des Politiques de la Terre at Université Paris-Cité). These entities are often jointly resourced by research and public organisations and may focus on synthesising knowledge, coordinating networks, building action-research partnerships, or generating new evidence.

To fulfil their mission, CSOs rely on distributed support ecosystems within their organisations - PhD students, public officers, early-career researchers,

City Science Officers as knowledge brokers or mobilisers, they bridge epistemic communities, enabling evidence to flow across institutional boundaries and into the core of urban decision-making.

and senior academics alike - who contribute time and labour towards city-science collaboration, even when it sits outside formal recognition structures.

An illustrative example of this collaborative infrastructure can be seen in institutionalised research-policy partnerships developed between city governments and universities. These partnerships represent more than ad hoc cooperation - they function as *designed architectures of exchange*, embedding knowledge mobilisation directly within governance systems. They operate simultaneously as relationship brokers, coordination mechanisms, and accountability structures, resourced through dedicated staff and governed through shared decision-making frameworks.

One such format is the policy fellowship model, which has emerged as a particularly powerful mechanism within these infrastructures. Drawing on theories of embedded research and co-production (Oliver et al., 2014; Vindrola-Padros et al., 2020), policy fellowships offer a *reciprocal mobility scheme* in which researchers are placed within government departments and policymakers within academic institutions. Rather than one-off consultancy roles, these placements constitute *structured and relational exchanges* that enable mutual learning, alignment of institutional logics, and co-creation of actionable knowledge. By bridging the cultural and operational divides between academia and policy, they enable both sides to navigate each other's logic, constraints, and opportunities. Consistent with findings in the embedded research literature (Gough et al., 2018), such roles are valued not only for the transfer of expertise but for cultivating *relational trust* - a precondition for long-term collaboration.

## 2. Navigating the Politics-Science Interface

### 2.1. Different Question Logics

While collaboration between cities and researchers provides important opportunities for exchange, its effectiveness is often limited by the differing logics and rhythms of the two worlds. Policymakers typically operate under political mandates that demand visible outcomes within short electoral cycles of 4 to 5 years, while researchers are driven by questions of methodological depth, theory-building, and timelines that extend over years. This temporal and epistemic mismatch can lead to frustration on both sides: research outputs may arrive too late to inform policy, while political priorities may shift before studies are completed.

A more fundamental challenge lies in the fact that policymakers and scientists tend to ask inherently different types of questions. Research by Osman and Cosstick (2022) at Cambridge's Centre for Science and Policy (CSaP) highlights this divergence empirically: policymakers systematically pose questions that are instrumental, procedural, or focused on enabling

Research-policy partnerships developed between city governments and universities function as designed architectures of exchange, embedding knowledge mobilisation directly within governance systems.

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specific outcomes and outputs - what the authors term "instrumental/procedural/enablement questions." By contrast, researchers predominantly pursue causal-analytic questions, seeking to uncover underlying mechanisms and drivers of social phenomena. In practice, a policymaker may ask: "How can we reduce traffic congestion before the next election?" while a researcher asks: "What socio-economic factors influence patterns of car dependency in cities?" Both questions are valid, but they operate on different timescales and serve different ends.

### 2.2. Matching Questions to Formats

Collaboration does not hinge solely on reconciling differences in the types of questions. The success of collaboration depends too on matching the nature of the policy question with the appropriate collaboration format. As highlighted in the knowledge exchange and embedded research literature (Oliver et al., 2014; Vindrola-Padros et al., 2020; Gough et al., 2018), exploratory questions may be best served through horizon-scanning studies or co-creation labs; evaluative questions often require embedded researchers or fellowships to assess programmes in real time; and design-oriented questions benefit from pilot projects and co-production processes with city actors. Aligning the format to the type of question ensures that both academic and policy needs are addressed without distorting either.

Each collaboration format generates distinct outputs tailored to both policy and academic audiences. Exploratory formats, such as co-creation labs or projects on Areas of Research Interest (ARI), typically produce reports, white papers, or early insights for strategic city planning. Evaluative formats, including embedded researchers and policy fellowships, yield case studies, program assessments, and targeted policy briefs. Design-oriented collaborations, like pilot projects or co-production labs, produce prototypes, toolkits, and actionable guidelines.

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Question Type	Collaboration Format	Typical Outputs/Deliverables	Dissemination Strategy
Exploratory	Co-creation lab / ARI-scoped	Reports, white papers, early insights	Policy briefs, workshops, internal city discussions
Evaluative	Embedded researcher / fellowship	Program assessments, case studies	Policy briefs, academic papers, presentations
Design-oriented	Pilot/co-production lab	Prototypes, design guidelines, toolkits	Interactive workshops, public demos, city strategy integration

Recognising the connection between question type, format, and outputs is crucial for structuring collaborations and planning dissemination strategies that ensure research informs decision-making effectively.

### 2.3. Recognising the expertise of cities

The expertise of cities and the associated grey literature must be also mobilised, and this needs to occur at each stage of the collaborative project. Technical studies, plans, strategies and the expertise of the technical departments of the cities are often overlooked in research projects thus leading to misunderstandings and non-use of crucial information. Indeed, grey literature constitutes a mine of knowledge that must be combined with research literature to enable contextualized and effective collaboration projects. This gap can be overcome by developing and maintaining shared grey literature databases between cities and universities, fostering research projects that analyze City plans and strategies and systematically integrating a grey literature review in research methodologies.

Research results must be translated into deliverables dedicated to each public (decision-makers, experts, general public) based on their particular needs, constraints and primary concerns. It is a key condition for research to have an effective impact in practice. Decision-makers need short and targeted policy briefs, while experts of the cities need precise guidelines and documented case studies adapted to their specific field of action, and the general public needs accessible content directly linked with their daily preoccupations. This “translation work” needs to be done in close collaboration between researchers, city experts and policy advisors.

### 2.4. Recognising the Political Dimension

It is also essential to recognise that the politics-science interface is not neutral. Political agendas shape which issues are prioritised, how resources are allocated, and which forms of evidence gain traction. Research that aligns with electoral priorities or mayoral mandates is perhaps more likely to be acted upon, even if other technically sound research is available. Conversely, research that is blind to political realities risks marginalisation, regardless of its methodological quality. Rather than viewing politics purely as a barrier, it is more accurate to understand it as one of the conditions that determines how evidence is interpreted, valued, and mobilised in urban governance.

Within this complex terrain, CSOs play a pivotal role. Positioned at the intersection of research, politics, and bureaucracy, they act as mediators who can interpret political mandates as researchable questions, while also rendering research findings into narratives that resonate with political priorities and timelines. Their hybrid expertise allows them to cultivate trust, manage expectations, and sustain co-creation as more than a one-off

project. In this sense, they are not just translators but architects of the very infrastructures that enable cities and researchers to work together effectively. Researchers, too, must recognise this dynamic. While guided by academic freedom and research integrity, those who are able to articulate the societal relevance of their work at key political moments are far more likely to shape urban decision-making and contribute to institutional legitimacy.

## 3. Co-Designing Action-Research Projects

Models where the questions themselves are put forth and elaborated together present a further step in collaboration formats, going beyond bridging research expertise and embedding professionals at both ends, the city and the research labs. In a co-creation model both the city and the research institution shape the project and the form that the collaboration takes. They both identify the questions that need answering to improve the life of citizens and design the best methodological probes in collaboration. It is not that researchers provide answers to city governors’ queries by being embedded in their structures. The city and the researchers undertake the research together, and the tasks destined to elicit the information, the elicitation mode or the groups of stakeholders to be targeted to understand the issues are designed and selected in collaboration. In this format of collaboration the city and researchers work on a par to the extent that both ends are entitled to claim authorship in the outputs.

This can be evidenced by cities and researchers increasingly experimenting with co-designed research questions that reflect both academic inquiry and policy urgency. In the UK, one approach has been the use of Areas of Research Interest (ARIs) - statements published by government departments that articulate medium-term to long-term policy challenges requiring research evidence. By signalling these priorities to the research community, ARIs provide a framework through which academic expertise can be aligned with pressing policy agendas. While originally designed for central government, this approach holds potential for city governments seeking to articulate their own research needs in ways that can stimulate and guide academic engagement. Knowledge brokers, in the form of CSOs or otherwise, are often well positioned to operationalise such approaches, translating city priorities into researchable questions and feeding academic insights back into policy debates.

To facilitate the development of deep, effective collaboration, structures such as Memoranda of Understanding (MoUs) (e.g., University of Greenwich and Royal Borough of Greenwich) or covenants between cities and universities can be established to provide a foundation of trust and shared understanding, express mutual dependencies and commit to particular actions (e.g. Linköping University with Linköping and Norrköping

In a co-creation model both the city and the research institution shape the project and the form that the collaboration takes.

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Municipalities; comprehensive or theme-specific city-university collaboration framework -e.g. Trondheim or Volteface programme in Lausanne focused on sustainability challenges, Exter Culture in the UK). These agreements clarify roles, responsibilities, and objectives, helping manage uncertainty and signal long-term commitment-even amidst shifting political leadership or institutional priorities. MoUs can also make crucial resources, particularly time, available to support the work. Complementing this, universities and research institutions offer frameworks that uphold rigor and integrity, ensuring that scientific methods are ethically sound and that considerations of equality, diversity, and inclusion are systematically embedded into research processes. Together, these mechanisms create the conditions for collaboration that is both trustworthy and methodologically robust.

### Collaboration Toolbox: Sample Formats for the Journey

To move from abstract principles to operational practice, it is useful to identify the concrete collaboration formats through which city-science partnerships are enacted. Drawing on experiences such as those of the City of Paris and the EUniverCities network, we present here a typology of mechanisms that can be assembled and sequenced as needed - not as a prescriptive model, but as a *toolbox* for different moments in the journey.

These formats vary in their outcomes: some generate new knowledge, others synthesise existing expertise, and others still support evaluation or inform policy recommendations. What they share is their function as *building blocks* of collaboration. Yet despite their growing visibility, many remain absent or underdeveloped in most European cities. Due to the current lack of stabilized long-term financing schemes for city-research collaborations, it proves essential to mobilize a collection of complementary formats to build effective and long-term collaborations.

The experience of the City of Paris shows that choosing the right format depends less on thematic fit than on pragmatic factors - namely the level of time commitment, funding requirements, and degree of formality involved. Clarity on these elements at the outset is essential to prevent disengagement partway through a project. Other considerations further inform selection, such as the maturity of the collaboration (new vs ongoing partnership), alignment of institutional strategies between partners, desired level of formality (from informal student projects to structured Horizon Europe consortia), or the geographic scope of the collaboration (local, national, international). What follows, then, is not a menu to choose one option from, but a navigational aid: a typology designed to help cities and researchers assess the format best suited to their current stage, and to understand how different formats can be layered to build lasting collaboration infrastructures.

These formats are presented **from lower to higher implication level** for researchers and civil servants in terms of time and resources dedicated to the collaboration.

- **Research projects external to cities** where cities only share access to research fields or data but are not part of the project.
- Tutored **student projects** in which students tackle urban challenges with research guidance (e.g. Demola programme in Tampere, Finland). It can be an individual student work (i.e. a research thesis on a city topic) or collective student project. This format is very simple to set up as it only depends on researchers and civil servants (no funding involved) and is part of researcher's mission and of many civil servants' interests (education). That can be a useful first step towards a more demanding collaboration format (i.e. PhD, internship), or a good second-choice option for budget restrictions.
- **Scientific advisory boards** for city strategies or projects that regroup researchers and experts with specific knowledge of the targeted topic (e.g. Climate Plan; Social justice; Trees and adaptation to climate change...) to advise decisionmakers based on a scientific literature review of the topic, an evaluation of public policies, or field research and knowledge. Without dedicated time and resources, the role of a scientific advisory board can be very limited. It has great synergies with other collaboration formats that produce knowledge.
- **Hackathons**: create a pressure cooker situation in which teams compete to find a solution for a problem in a very short amount of time / let students develop solutions for urban/societal challenges
- **Joint city-university events**: to promote citizen's interest in science (e.g. Magdeburg's Long Night of Science, Lausanne's Mysteres, Innsbruck Reads...), to combine research and municipal expertise and advocacy on a dedicated topic (e.g. Paris' International forum of climate and meteorology / scientific seminar; CSI events)
- Co-creation of **city-research synthesis of expertise** that regroup and articulate multi-disciplinary research knowledge and the expertise of various city departments on a specific strategic topic to support decision-making, to facilitate field action and to develop new action-research projects or experiments (e.g. Synthesis booklets coproduced by the City of Paris and local IPCC "GREC francilien" on various strategic topics : Working classes and socio-ecological transition ; Material and energy sufficiency ; Orchestrating organic matters at a municipal scale)

- **Action-driven projects financed by research** that include as a selection criterion the explicit commitment and active participation of cities (e.g. French Programme PEPR Ville Durable et Bâtiment Innovant). They enable the progressive structuration of a research field aligned with city priorities, upon which many other collaboration formats can be started effectively.
- **City-financed research projects** that mobilize research efforts on specific city issues and allow researchers to access city data and research fields. This format can effectively complement a research-orientated project with more action-oriented research tasks.
- **City-integrated PhD** (e.g. "CIFRE" PhD in France) that enables PhD students to be co-tutored by a research lab and a city department on a topic of joint interest. This format allows for long-term and in-depth access to the research field. It enables the co-construction of a research project of common interest for both research and cities and the co-production of knowledge useful for action
- **National, regional or European projects and partnerships** (e.g. Horizon, Life) that are led by researchers and can associate cities as primary partners (receiving funds and human resources) or secondary partners (contributing to setting objectives and sharing data and access to research fields). This format allows for long-term collaboration and significant funding, but requires advanced project management skills and significant administrative engineering.
- **Observatories** that integrate researchers or civil servants with research skills to produce studies, synthesis and evaluation of public action on strategic topics (e.g. mobilities, environmental health, energy insecurity) for supporting decision-making and field action. This format is the most city-integrated and long-term since researchers or former researchers directly work inside cities. It requires a significant commitment and budget from cities and restricts the production of research papers as deliverables are directly targeted towards action.

#### 4. Funding Mechanisms Behind Sustainable City-Science Collaboration

Across Europe, different collaboration formats are often funded through a diverse mix of mechanisms, each with distinct priorities, timelines, and sources of support. This fragmented approach can present challenges in ensuring the sustainability of long-term partnerships. Typically, funding is

project-based, with grants provided by national research bodies, European research councils, and private sector contributions. While these funding sources can support innovative, short-term initiatives, they often create barriers to sustained collaboration, as they require continuous renewal and do not always allow for long-term planning or deeper institutional integration.

To foster more sustainable collaborations, cities must build diversified funding streams that support a variety of formats, from short-term student research projects to long-term institutional partnerships. Key mechanisms include city-allocated research budgets to prioritise urban-specific challenges, joint applications for national or European research grants, and long-term investments in knowledge centres or urban science hubs.

One of the key themes to emerge from a recent LRaPP hosted roundtable is the need for more strategic, mission-driven funding that supports the long-term objectives of collaborative research efforts. European partnerships would benefit from coordinated funding portfolios that align research priorities with broader regional and national challenges. By fostering a more flexible and integrated funding model, partnerships across Europe could secure consistent, long-term support, leading to more impactful collaborations that address pressing urban challenges while promoting knowledge co-production and innovation across sectors.

#### 5. Measurement and Evaluation

Measuring the success of collaborations involves both quantitative and qualitative indicators. While traditional metrics focus on outputs like publications, citations and impact on actual implementation of new policies, it's equally important to assess trust, repeated engagement, and the feeling of being "heard" among participants. These qualitative aspects often go overlooked but are crucial for understanding the depth and impact of collaboration.

Challenges in measuring impact arise because not everything valuable is easily quantifiable. Emotional and qualitative aspects often lead to misaligned expectations, especially when funders expect measurable outputs, while community value is less tangible. However, these can still be subjectively measured through interviews, surveys, and fieldwork, providing a comprehensive view of collaboration success.

#### 6. Measurement and Evaluation

From our European contexts, despite their diversity, a common thread runs through them: the search for mechanisms that can transform research into relevance for citizens. Collaboration between cities and

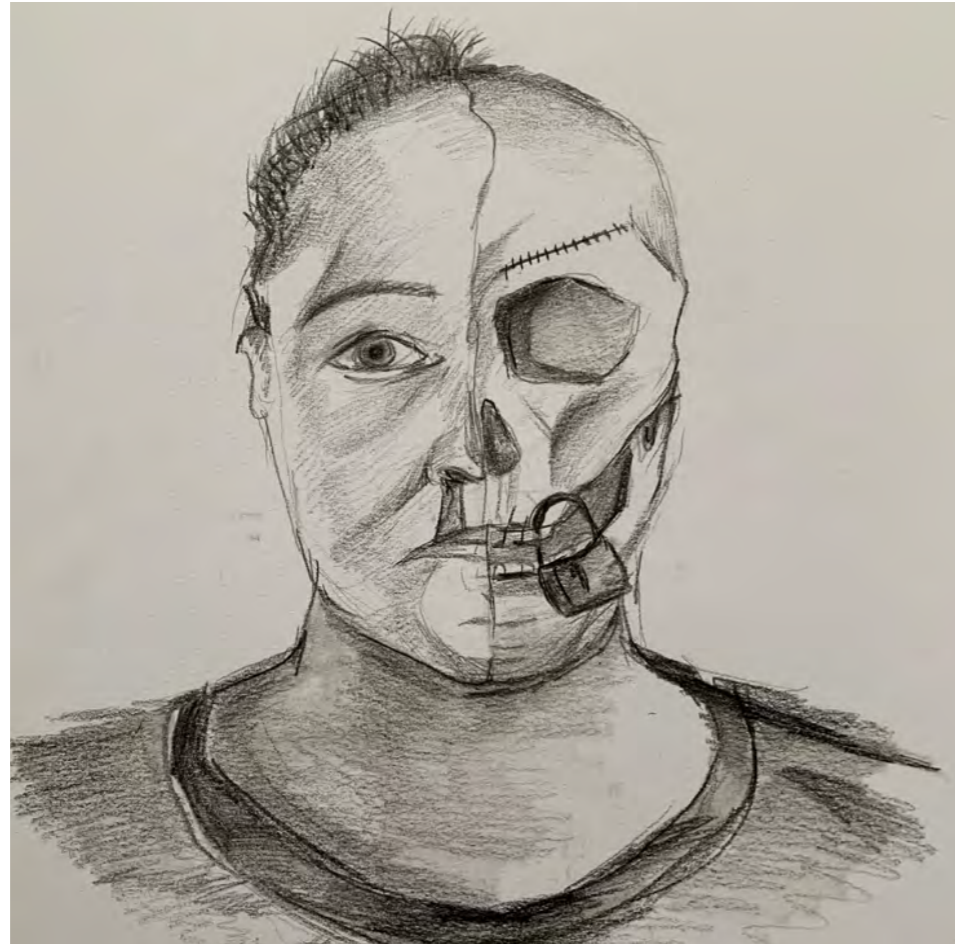
There is need for more strategic, mission-driven funding that supports the long-term objectives of collaborative research efforts.

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research can be thought of as a journey rather than a fixed destination. At different points along this journey, the needs of both cities and researchers evolve. Early stages require establishing trust, shared understanding, and clarity of purpose. As partnerships develop, mechanisms for co-design, boundary-spanning, and iterative feedback become essential to ensure research remains relevant, actionable, and aligned with policy priorities. Later stages demand sustained investment, robust evaluation, and the translation of knowledge into tangible outcomes that serve both academic and societal goals.

Recognizing collaboration as a dynamic journey underscores the importance of flexibility, reflexivity, and responsiveness. Cities need insights that are timely, tailored, and applicable, while researchers require partners who can provide context, access, and pathways to implementation. When these evolving needs are met with well-structured collaboration formats, adequate resourcing, and mechanisms to navigate political and institutional complexities, the journey from shared interest to shared impact can be transformative-producing knowledge that not only informs decisions but also shapes the way cities evolve and adapt.

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"I Can't Say It"  
About the inner turmoil of silence and its consequences. From Greenwich Youth Justice Service Arts Project.



"All of My Sunsets"  
About hope as a way forward. From Greenwich Youth Justice Service Arts Project.

**Emma Clements**  
Royal Borough of Greenwich

## Royal Borough of Greenwich, Greater London

The Royal Borough of Greenwich is one of the 32 boroughs in which Greater London has been divided since 1965. It has a population of approximately 302,000 residents, forming one of the most diverse ethnic and migrant international communities in England, including Afghan, Ukrainian, Somali, Syrian, Nepali and several other countries across the African Diaspora, with more than 150 languages spoken. Greenwich features large contrasts, ranging from high affluence boasting one of Europe's biggest cultural, monumental and entertainment hubs, with Greenwich Park, The Old Royal Naval College, The Cutty Sark, The Artillery Barracks or the O2 Arena, to pockets with the highest deprivation and crime rates across the nation (top 20% in England with three neighbourhoods in the top 10%). The delivery of key services (housing, education, health and social services) amidst such a complex scenario is organised at the borough (municipality) level, often liaising with services at regional or national levels.

This multi-level web of relations becomes even more complex for those aspects where several teams have to work together to deliver a service. This is superlatively illustrated by the case of youth

justice, which operates under the general oversee of the national Youth Justice Board in liaison with the Secretary of State for Justice and a multi-agency team within the borough. Royal Greenwich Youth Justice Service, set up under the Crime and Disorder Act 1998 to prevent youth crime and support children in the Youth Justice system, comprises social workers, probation officers, youth justice workers, education, Child and Mental Health specialist, nursing, speech and language therapist, restorative justice/victim workers, group work and reparation/mentoring supports. It has been within this multi-agency scenario that an organic relation with the multi-disciplinary research Institute for Inclusive and Environments at the University of Greenwich has cemented. Both the common vision on the multi-level approach as the best way to address issues and the key value given to partnerships to create better understanding and deliver change for communities boosted the collaboration. For its particular complexity, youth justice is an unparalleled testing ground to identify blind spots, explore cooperation across sectors, establish common agendas leading to impact and assess how multi-disciplinary research findings can improve practice.

The Youth Justice System of the borough first became involved with the University of Greenwich through the European scheme of Cooperation in Science and Technology - COST Action, via the project entitled "Justice to youth language needs: human rights undermined by invisible disadvantage". Capitalising on an existing Memorandum of Understanding between the University and the Royal Borough, the academic Chair of the project sought the participation of the Children and Youth Justice Services in the submission. The study focuses on the assessment of language abilities of children and young people when they become in contact with justice, which is pivotal to ensure fair access to justice. Evidence shows that between 60-80% of children in the CJS have undiagnosed speech and language needs at entry into the system and they are only identified after criminal justice procedures. Funding was obtained for the period 2023-2027 and civil servants and organizations working with the borough became part of the network that includes academics, practitioners across sectors (speech and language therapy, education, justice, police, secure state) and policy makers. The cross-discipline discussions



"X"

About being silenced and Black History disappearing. From Greenwich Youth Justice Service Arts Project.

have enriched both and has provided tangible results including giving the voice to those who haven't usually; e.g., involving children in conflict with the law. One of them commented "I didn't think it would make any difference, but maybe it will".

This collaboration has given the borough access to the latest academic research, has evolved into mutual appreciation and led to further concrete collaborations with the Institute for Inclusive

Communities and Environments, improving the life chances of the children and families. The Royal Borough of Greenwich is working with the Arts research centres exploring the poetics of space and working with the design hub with children looking at our living environment; with the centre for Transformative Justice, the borough is developing a new research project on stop and search of children which will be designed by the researchers and delivered by university students in

conjunction with the Youth Justice Service and a community based legal centre.

These initiatives that support community and public sector engagement in research make an impact for the residents in the municipality and are possible only through the collaboration with researchers.

Noam Marseille  
Ville de Paris

## City of Paris

### The co-construction of a social justice perspective on ecological transition

#### I. A new political engagement for social justice in ecological transition...

As some other French municipalities in the last election of 2020, the City of Paris has built a strong political engagement for social justice in ecological transition. The new Paris Climate Action Plan 2024-2030 makes social justice and the fight against inequalities the compass of its climate action, with multiple and effective connexions built with the other strategies of the municipality that tackle these issues: the Paris Environmental Health Plan, the Paris Pact for working-class districts, the Paris Resiliency Strategy. It comprises a set of actions towards the social groups who are the least responsible for climate change and pollutions yet the most impacted by it, such as : greening the streets and refreshing the city with a priority on working-class districts, renovating social housing, enforcing bioclimatic regulations, combatting energy poverty and food insecurity by giving access to quality and sustainable food, reducing air pollution with a focus on zones of environmental health fragility such as along the Boulevard Périphérique.

#### II. ... Rooted on long-term collaboration with research

The integration of social justice in ecological transition has been supported by a long-term collaboration with research.

#### A City-integrated PhD programme (CIFRE)

Since 2021, 7 PhD students have been integrated inside the City of Paris to document, analyse and support public action on a diversity of topics: social justice and acceptability of environmental public policies (Ellora Miguel), popular and solidarity economy for food security (Olivia Mercier), nature and environmental justice (Lisa Lejemtel), mobility constraints and environmental health in working-class districts (Antoine Leydier), valuing and supporting local initiatives for socio-ecological transitions in working-class districts (Héloïse Louiset), development of energy community in cities (Marta Tramezzani), impacts of urban innovation in working-class districts (Trinh Thuy-Trang).

#### City-research synthesis of expertise (carnets)

Between 2022 and 2024, the City of Paris has conducted an unprecedented experiment in collaboration between research and public action on socio-ecological transition which brought together researchers from GREC francilien (local IPCC: Regional Expert Group on Climate Change and Ecological Transition in Île-de-

France) and officials from the City of Paris. Working groups focused on key themes to inform municipal public policy: the working classes and the socio-ecological transition; urban energy and material sufficiency; health and the socio-ecological transition in urban areas; and the orchestration of urban organic matter flows. For each of these themes, interdisciplinary research groups produced a state-of-the-art report, on the basis of which workshops were organised to bring together research, expertise and the actions of the City of Paris's departments. **Synthesis of expertise** named "carnets" were co-produced and published in March 2024: each around 50 pages long, they summarise the consolidated research findings and their intersection with public expertise on these four themes and propose recommendations for integrating them into public policy, which are included in **summary sheets** of collective learning (4 pages). The summary sheets were translated into **summary for policymakers** and presented to the local elected representatives during a decision support protocol inspired by the IPCC.

The **synthesis of expertise on working classes and the socio-ecological transition** integrated knowledge from 4 main departments of the City and their **observatories**, the 6 PhD candidates and 4 researchers from the GREC francilien. Built



in relation with the revision of the Paris Climate Action Plan, it provided the City with recommendations aiming at : supporting the empowerment and capacity building of working-class communities in relation to environmental issues, documenting the ecological practices and initiatives of the working classes in Paris, investigating and investing in the neighbourhood level to territorialise the socio-ecological transition, supporting the working classes' commitment to the socio-ecological transition.

#### New collaborations

The Earth Policy Centre (Centre des Politiques de la Terre), an out-of-house research laboratory

affiliated with the Paris-Cités University seized the opportunity to start a new **action-oriented research on upper classes and socio-ecological transition** in collaboration with the City. While the researchers conducted 100 semi-structured interviews with citizens, the City identified and gathered a structured feedback on measures that involve the upper classes in the ecological transition of the city. Recommendations to better involve the upper classes in the ecological transition of the city will be identified from this material.

The creation of the **Paris Climate School** by the national foundation of political science will further support the City of Paris to observe and integrate social

justice in ecological policies by co-designing a set of **strategic indicators for a just ecological transition** and the associated narrative, that will complement the existing governance tools.

# 4 Methodologies for Addressing Urban Needs

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Department Public and Occupational Health, Amsterdam UMC| <sup>4</sup>City of Ghent|  
<sup>5</sup>University Paris-Est Créteil

*"To foster improved urban environments, we need scientific and societal insights into our complex urban systems, into how natural and social processes are interconnected and reach tipping points, into the good, the bad and the ugly of our cities. We need amazing discoveries, technical and social innovations to transform the ugly, leave the bad behind and reach for the good. And most of all, we need to make the city together, because WE are the city."<sup>19</sup>*

## Introduction

Universities and cities increasingly find themselves at the frontlines of the need to live with and address "wicked problems"<sup>20</sup>: both need to act on issues such as social inequality, green mobility, mental health or the rise of fundamental disagreements over values and resources that have no single solution. Together they are developing new ways of working together across disciplines, sectors, and also lived experiences. Jointly, they determine processes and regulations to participate in the formation of viable pathways into an uncertain but hopefully better future. In this complex scenario, researchers, students, city dwellers and city makers – a range of agents who do not necessarily share the same goals – collaborate to analyze tipping points and push for social and technological

<sup>19</sup> van Leeuwen, E., Nevejan, C. et al. (2024). Conference description, "Reinventing the City: Blueprints for Messy Cities 2024." AMS Institute Amsterdam, 23-25 April 2024. <https://openresearch.amsterdam/en/page/107814/scientific-conference-reinventing-the-city-2024>; <https://reinventingthecity24.dryfta.com>

<https://openresearch.amsterdam/en/page/107814/scientific-conference-reinventing-the-city-2024>; <https://reinventingthecity24.dryfta.com>.

<sup>20</sup> Rittel, H. and Webber, M., "Dilemmas in a General Theory of Planning", *Policy Sciences*, Vol. 4 (1973): 155-69.

innovations. Jointly they develop and employ a range of old and new methodologies to enable representation, negotiation, scenario building, forward thinking and conflict regulation. Among these methods, the impulse to tell stories in order to cope with the ugly and imagine the good is understood as both a problem and part of a potential solution.

This chapter places storytelling and its analysis center stage. It discusses core concepts of worldmaking and city building such as scripting, theming and autopoiesis to indicate why certain problems feel so unsurmountable and yet how change is brought about nonetheless. It introduces methodologies from a range of different applications and disciplines such as script analysis, bridge-building, narratology, and citizen neuroscience. To inspire replication, the chapter showcases a number of good practice examples in which these concepts and methodologies have taken effect.

**An Example from Mental Health Research and Action:** In densely populated areas, many distinctive communities of practice are settled in close proximity to each other, expected to live together in harmony. But doing so is often described as being increasingly difficult and a shared sense of safety is under pressure. In a recent position paper (Misiak et al., 2025<sup>21</sup>), the Urban Mental Health task force of the European Psychiatric Association describes these developments and their repercussions for the most vulnerable groups in society, including patients with severe mental illness. People who are vulnerable have fewer opportunities to protect themselves against the challenges of living in overcrowded cities. Extreme heat, crime, drugs, and a lack of accessible greenspaces increase the chance that their mental health will deteriorate and eventually fold. Not only the human fabric is feeling the stress of the first urban millennium in human history. Societal, economic, and environmental changes are also pulling at the thread of the urban fabric, producing material changes to its design and everyday usage – factories and plants have been closing throughout the past century and the ensuing brownfields need to be re-envisioned. Working and living conditions have changed quite drastically since the Covid pandemic, demanding adaptive planning by all institutions, providers of housing and employment involved. Urban institutions, society and academic communities work on methods and collaborate on effective strategies to identify and prevent the unhealthy living conditions that take the biggest toll on the most vulnerable residents in the city. Together they seek to ensure that residents receive the support and training which will allow for the development and maintenance of a positive mindset despite all odds. This almost counterintuitive mindset is needed to envision alternatives and find pathways in often intractable scenarios.

People who are vulnerable have fewer opportunities to protect themselves against the challenges of living in overcrowded cities.

<sup>21</sup> Misiak B, Karska J, Kowalski S, Courtet P, Volpe U, Schouler Ocak M, Destoop M, Adorjan K, Kraxner F, Buwalda VJA, Campion J, Beezhold J, Falkai P, Dom G (2025). Urban mental health: a position paper of the European psychiatric association. *European Psychiatry*, 68(1), e127, 1–15 <https://doi.org/10.1192/j.eurpsy.2025.10100>

**What this Chapter Offers:** This chapter discusses exemplary actions in which city science as a type of research in, for, and with city dwellers activates the head as well as the heart. This new type of head and heart research and citizen science leverages the immense data sets generated and stored in our cities, combining them with research on and interventions into the practices of embodiment, immersion and storytelling that are also at home in the city. Where story, action and data analysis are interwoven in designing a positive future and explaining the present and the past in meaningful and believable ways, promising pathways can open up in the most messy and convoluted scenarios. Patches and repairs for many of the intractable urban problems come into view when students and city-dwellers ground their theoretical learning and abstract knowledge in their own urban environments, teaming up with city science promoted by universities and city administrations alike. One such example is demonstrated by the positive city training piloted in the metropolitan region Ruhr, a polycentric urban region in the heart of Europe that has vast experience with environmental pollution, economic and energy transition, migration and educational as well as infrastructural transformation.

**Core Principles:** The authors of this chapter are scholars, students, and professionals in the fields of urban planning, city administration, literature, culture, society, medicine and technology. They invite participation in transdisciplinary, multi-actor, design-oriented, back-casting interventions into the so-called wicked problems of urban change. Methodologies for addressing urban needs in the fields of health, education, environmental restoration or conflict regulation work best, when they acknowledge and yet bridge existing divides via an ethics of sharing, practices of co-creation and a theory of temporal and spatial connectivity. Improving a shared understanding of connectivity is crucial. People will feel more at ease and more effective when they can account for the many ways in which the past, the present and the future are intricately intertwined. Additionally, the methods for addressing urban needs should account for the interconnections between the many places from which goods and people come to the cities under investigation. Timing is key as well: Methods to understand and address the most pressing urban needs have to come at the very point at which a concrete city more often than not becomes a worse, rather than a better place for its human and non-human inhabitants.

**Guiding Questions:** Recently, the idea that storytelling can be one of those methods to understand and address urban needs has gained traction. There is a new sense that literature and the arts might play a bigger role in the formation and transformation of healthy, happy cities than previously understood. As Simone D'Antonio, a member of the EU-funded project URBACT suggests, "[s]torytelling is a key tool for improving any urban planning process, both for engaging residents in different dimensions of the spatial regeneration as for helping professionals in

Where story, action and data analysis are interwoven in designing a positive future and explaining the present and the past, promising pathways can open up in the most messy and convoluted scenarios.

The idea that storytelling can be a method to understand and address urban needs has gained traction.

better understanding users' needs."<sup>22</sup> But how and in what ways does storytelling become so very crucial to top-down planning interventions into historical, social and economic dynamics? And would it be possible to initiate a number of City Science projects that will allow for an urban development that effectively includes the most vulnerable in designing and strengthening the urban fabric of tomorrow, making everyone involved more resilient along with the society that they help to shape?

## 1. Key Methodological Concepts

**Storytelling as access point to scenario building from past to present into the future:** Efforts to work towards improved urban environments must involve 'scenario building' and the testing of alternative parameter settings. Here storytelling and the use of fictional texts can offer some important lessons on how to incorporate this kind of scenario building into multi-stakeholder forms of city science. Literature has long been famous for offering a possibility to simulate reality and future options without immediate risks to the reader. As scholars such as Kenneth Burke, Dieter Wellershoff or Wolfgang Iser have argued literature can and has always been used as symbolic action. It can provide a social experiment free from the constraints of everyday life. Literature and storytelling experiment with the rehearsal of behaviour that has no significant pragmatic consequences for the reader or listener. This lack of immediate consequences makes it possible to try out in fiction and storytelling different scenarios or potential solutions for key societal issues. Needless to say, literature and media production have also been used to achieve the opposite, namely to engage in trial action that enhances distrust, anxiety and fear. Storytelling is never an innocent method, since it is a tool of worldbuilding that lends itself to all ends, good and bad. While literary texts and media productions tend to have identifiable authors who can be held accountable for the imaginative world they are building, stories and scripts are thoroughly communal forms. They arise in communities of practice and are passed on across time and space. Here it is not one author, a group of people, an institution or a network that imagines a better or worse scenario. Instead, a multiplicity of speakers and listeners bring stories and scripts to life and action. The method of city script analysis can foster understanding of the dynamics that scripts can set off in the city.

### City Scripts

City Scripts are powerful tools of self-description which shape future actions as much as the interpretation of the present and the past. Scripts use images, stories, key characters and massive sets of data. They combine these elements to explain a city to its citizens and to the world at large. But scripts do not only explain a city. They spark action, serving as blueprints

While literary texts and media productions tend to have identifiable authors, stories and scripts are thoroughly communal forms.

<sup>22</sup> D'Antonio, Simone (2022). "Storytelling for Urban Change: A Narrative for Thriving Streets." URBACT. <https://urbact.eu/articles/storytelling-urban-change-narrative-thriving-streets>.

for future developments. *Scripts* connect convincing stories with a world of matter-of-fact planning (Ameel et al. 2023: 101-106)<sup>23</sup>. A good understanding of the scripts at work in a given part of the town equips planners with a sense of a city's history and present-day representations, thereby setting the groundwork for the future to be brought into existence. Too often, practical concerns like the speed of technological development, incalculable increases in costs, and delays in construction postpone or terminate the execution of a project. Divergent interests further complicate the decision-making process, causing discord, division and despondency. To counter these uncertainties, planners and stakeholders need an optimistic story or vision. This is where scripts can help: Rather than looking at the city from a purely data-driven perspective, active and methodical participation in scripting involves engaging figural expressions (numbers, icons, but also outstanding or everyday characters), narrative exposition (a storyteller, a perspective, but also a sense of the listener of this story), and media presentation (tacit use of the various media available for communication, thus also engaging sound, sight and listening simultaneously as well as consecutively). Scripts combine a whole set of different acts of storytelling. They frame which part of the story matters. They inscribe actors or principles into the scene. They describe the problem on the ground, re-script the history of this problem, re-invent the issues at stake and they make a whole lot of normative ascriptions: how to act, what to deem important, which values to defend. City scripts „activate procedural knowledge, they serve as self-description, and they provide blueprints for the future. Thus, scripts establish contingent connective tissues between the past, the present and the future.“ (Buchenau & Gurr 2021: 142)<sup>24</sup>.

In other words, scripts inform how we see the world around us and our future selves. Like a theatre script, city scripts tell stories in, through and about a city and “inspire an understanding about a specific city itself, just as much as its inhabitants, their shared history, present, and future” (Buchenau et al. 2023: 9)<sup>25</sup>. Indeed, city scripts create concrete understandings of a city and its inhabitants across planning documents, city guides and everyday storytelling; and these understandings define the actions and decisions of city dwellers quite extensively. Globally consequential scripts of and for the city include the creative city, the green city, the smart city and the inclusive city. These scripts might have been promoted by urban planners and designers, but they have been made meaningful and effective by popular culture and storytelling. To geographers and urban

23 Ameel, L., Gurr, J.M., and Buchenau, B. (2023). *Narrative in Urban Planning: A Practical Field Guide*. Bielefeld: transcript. 146 p. DOI:10.14361/9783839466179. [Open Access](#).

<https://openresearch.amsterdam/en/page/107814/scientific-conference-reinventing-the-city-2024>; <https://reinventingthecity24.dryfta.com>.

24 Buchenau, B., J.M. Gurr (2021). “Scripts’ in Urban Development: Procedural Knowledge, Self-Description, and Persuasive Blueprint for the Future.” Jens Martin Gurr. *Charting Literary Urban Studies: Texts as Models of and for the City*. New York: Routledge. 141-163.

25 Buchenau, B., Gurr, J.M., and Sulimma, M. eds. (2023). *City Scripts: Narratives of PostIndustrial Urban Futures*. Columbus: Ohio State University Press. DOI: [10.26818/9780814215524](https://doi.org/10.26818/9780814215524) [Open Access](#).

studies scholars from the social sciences, but also to urban planners and developers, the analysis of scripts suggests concrete elements that need to be studied and heeded when engaging in pragmatic/real-world storytelling. This new form of storytelling for better urban futures offers much more than alternative forms of documenting and accompanying planning processes. Scripts are not simple means to influence decision-makers or inhabitants of a proposed urban development. They are also very effective tools of conviction in complex and conflictive scenarios, since they provide active roles for a large variety of speakers and listeners.

One example of an effective and consequential city script is the slogan “From Green, to Gray, to Green” which the city of Essen (Germany) adopted in 2017 after earning the title of “Green Capital” on behalf of the Ruhr Region. The script combines the short narrative below with a slogan (“From Green, to Gray, to Green”) and an image (of a green urban wilderness previously turned gray by industrialization, yet returning to nature after deindustrialization):

The successful 150-year story of transformation from a city of coal and steel to the greenest city in NRW is a model for many European cities undergoing structural transformation. [...] Our green infrastructure is the engine of sustainable urban development. The competence for change of our people is the key to success in this process of transformation.<sup>26</sup>

This ensemble of text, image and slogan crafts a cultural image of Essen as a city with a long-standing industrial urban heritage that re-scripted its former “gray” image by creating the “green infrastructure” which now defines its present-day state in the city’s self-descriptions. It also contains a normative ascription using the words “successful”, “green”, “sustainable”, “competence” and “success” to mark its progress. This script is accompanied by a detailed blueprint of Essen’s sustainable transition in the application for the title of “Green Capital” and related pamphlets.<sup>27</sup> Essen’s ‘Green Capital script’ “activate[s] procedural knowledge”, it describes and evaluates Essen’s industrial past and post-industrial present-day state, and it “provide[s] blueprints for the future”. This green capital script of Essen establishes “contingent connective tissues between the past, the present and the future.”<sup>28</sup>

26 Translated from City of Essen (2014). “Bewerbung der Stadt Essen um den Titel ‘Grüne Hauptstadt 2017’”, quoted in Ameel, L., Gurr, J.M., and Buchenau B. (2023). *Narrative in Urban Planning: A Practical Field Guide*. Bielefeld: transcript, 101.

27 For further information see City of Essen (2014), “Bewerbung der Stadt Essen um den Titel ‘Grüne Hauptstadt Europas 2017’”.

28 Buchenau, B., J.M. Gurr (2021). “Scripts’ in Urban Development: Procedural Knowledge, Self-Description, and Persuasive Blueprint for the Future.” Jens Martin Gurr. *Charting Literary Urban Studies: Texts as Models of and for the City*. New York: Routledge, 142. The analysis of the script can be found on page 144. As blueprints, scripts regulate and prescribe possible visions of the future city which can take on utopian but also dystopian qualities (Sulimma, M., Buchenau, B., and Gurr, J.M. (2023). “Introduction: City Scripts in Urban Literary and Cultural Studies.” *City Scripts: Narratives or Postindustrial Urban Futures*. 1-24). At their best, scripts serve as blueprints into a viable future. But because of their deep-seated alignment with storytelling and popular beliefs.

Scripts provide active roles for a large variety of speakers and listeners.

Scripts inform how we see the world around us and our future selves. Like a theatre script, city scripts tell stories in, through and about a city and “inspire an understanding about a specific city itself, just as much as its inhabitants, their shared history, present, and future.”

If connected to storytelling as a form of knowledge-sharing-system (as promoted by URBACT) and new, incremental learning forms promoted by educational innovations such as the Aurora Service Learning toolbox,<sup>29</sup> city scripts become powerful tools for urban planners and other stakeholders. In order to bolster positive urban developments, city scripts need to be combined with the concept of autopoiesis as a principle of self-sustaining reiterations of lessons learned. The combination also can help to explain why certain unwanted urban developments are so hard to stop and change.

### Autopoiesis

The principle of “autopoiesis”<sup>30</sup> is an effective city science approach that enhances the ability to learn and adapt to changing situations. Understanding autopoiesis enables a critical intervention into the organization of the urban system under investigation, since it clarifies how roles, functions, processes, methods, tools, etc. are continually re-invented, but also reproduced. Autopoiesis describes a type of living system that is auto-referenced, meaning that it produces its own frames of reference, continuously maintaining them by each of its objects, actions and interactions. This autopoietic system functions as a “living environment” (Maturana & Varela, 1980: 13) that is rather hard-wired and difficult to change. The idea of a critical autopoietic approach is basically to understand and appreciate the living system at hand and to critically participate in its dimensions through the compilation and analysis of data, the involvement of citizens and researchers, the improvement of their interactions, and the design of health-empowering assemblages of spaces, material, and people. This city science enhanced system can develop the capacity to continuously learn and iterate lessons and reflections (Schön, 1983)<sup>31</sup> in order to constantly renew itself. As the example of E-City in the yellow page demonstrates, the methodological autopoietic approach helps to understand how socio-ecological changes promote adaptation strategies and crisis preparedness.

### Theming

One of the ways to implement a particular city script and to foster autopoietic forms of learning and adaptation is (narrative) placemaking (Ameel et al. 2023: 79-83)<sup>32</sup> or theming. Theming means taking all aspects of a delimited space—from the “material attributes of the environment (scale, color, layout, costumes)” and the “sensory environmental stimuli (visual,

<sup>29</sup> The Aurora Service Learning toolbox introduces service learning and co-creation as two complementary forms, by which university students and teachers can learn from and work with urban and rural communities. It contains three modules which provide introductions into the steps to be taken for effective combinations of “academic learning, personal growth and civic responsibility”, see Aurora SL Toolbox. <https://sites.google.com/vu.nl/aurora-sl-toolbox/home>.

<sup>30</sup> Greek: *autos* = self and *poiein* = to create. Maturana, H. R., Varela, F.J. (1980). *Autopoiesis and Cognition. The Realization of the Living*. Dordrecht: D.Reidel Publishing Company.

<sup>31</sup> Schön, D.A. (1983). *The Reflective Practitioner. How Professionals Think in Action*. Basic Books.

<sup>32</sup> Ameel, L., Gurr, J.M., and Barbara B. (2023). *Narrative in Urban Planning: A Practical Field Guide*. Bielefeld: transcript. 146 p. DOI:10.14361/9783839466179. Open Access.

aural, tactile, olfactory)” to the “practices of all constituents” as well as the “commodities sold” (Mitrasinovic 2006: 36<sup>33</sup>)—and consciously organizing them around a pre-defined topic, key concept or script (the “theme”) in order to evoke specific cognitive, behavioral, and emotional responses from people. As a design technique, theming has been professionalized by the contemporary theme park industry in the second half of the 20th century but has since been applied to a growing variety of commercial, private, and even public spaces (e.g., the urban environments and themed cities (co-)developed by The Walt Disney Company; see Freitag 2025<sup>34</sup>).

Like all theming, themed urban spaces have frequently been criticized for their lack of authenticity and their perpetuation of highly selective and recognizable stereotypes, but above all for catalysing social control, gentrification, and the privatization of public urban space. This is due to the fact that firstly, theming ideally impacts all material attributes of and sensory stimuli in a given space and thus requires rather strict (top-down) guidelines and regulations; and secondly, themes inevitably come loaded with certain values and worldviews into which inhabitants, visitors, and other users of themed urban spaces are immersed. Any themed urban space is thus characterized by a potentially problematic tension between the mechanisms of control and exclusion inherent in theming on the one hand and the inclusivity and plurality of urban spaces on the other hand. In heavily controlled themed spaces it can become difficult to build effective bridges between the cities and their universities, since bridge-building exercises change the very space in which they take place.

## 2. Building Meaningful Bridges Between Academia and Urban Stakeholders - Selected Methods and their Applications:

In the city of Ghent, two methodologies – living labs and design thinking – enhance the strategic investment in knowledge brokers discussed in chapter three to effectively embrace the public and institutional spaces in which they take effect, building powerful bridges between academia and urban stakeholders.

**Living Labs - Experimenting with the City as a Co-Creator:** Living labs turn the scripted or themed physical environment of the city itself into a testing ground for innovation. Rather than studying a problem from a distance, researchers, policymakers, companies, and citizens come together in real-life settings to test, learn, and adapt solutions in

<sup>33</sup> Mitrasinovic, M. (2006). *Total Landscape, Theme Parks, Public Space*. Burlington: Ashgate.

<sup>34</sup> Freitag, F. (2025). “Disney Cities: The Case of Val d’Europe.” *Suburbia Reconsidered. Vol 2: Multidisciplinary Perspectives on Suburbia and Culture*. Ed. Flajšarová, Pavlína, et al. Cham: Springer.

“Autopoiesis” is an effective city science approach that enhances the ability to learn and adapt to changing situations.

real time. This collaborative, iterative method has roots in participatory action research (Bergvall-Kåreborn et al., 2009)<sup>35</sup> and is often praised for making knowledge production more democratic and situated. Living labs are not just about applying research in practice; they are about co-creating knowledge *with* the people who are affected by it. By embedding experimentation into the urban fabric, living labs help ensure that the solutions developed are not only innovative, but also relevant, legitimate, and sustainable (Fauth, De Moortel & Schuurman, 2024)<sup>36</sup>.

**Design Thinking - Making Ideas Tangible to Foster Dialogue:** Design thinking offers a structured, creative process to collaboratively explore and address complex challenges and to intervene in contentious urban spaces. The method typically follows five stages: empathize, define, ideate, prototype, and test (Brown, 2009)<sup>37</sup>. In university-city partnerships, the power of design thinking lies in its ability to make the invisible visible. By building early prototypes—like rough mockups of a digital platform or sketches of a redesigned public space—teams can externalize ideas and make them discussable. This is crucial in transdisciplinary work, where different actors often speak different “languages.” Design materials and early concepts become boundary objects: concrete tools that allow city officials, academics, business leaders, and citizens to see and shape a shared future together.

**Application:** In Ghent, these two methodologies are advanced and aligned by the City Science Officer and the IDC-coordinators (Interdisciplinary Consortia for Societal Impact), who serve as professional knowledge brokers and connective figures. By employing living labs and design thinking in conjunction, they translate between research, policy, and practice to ensure durable collaboration. They align priorities, build trust, help different communities understand each other’s needs and timelines, and enable lasting change beyond the lifespan of individual projects (Meyer, 2010)<sup>38</sup>. The Comon program described in the yellow page illustrates what it looks like when living labs, design thinking, and knowledge brokering come together in one cohesive approach. Comon (<https://comon.gent/en>) is a collaboration of the city of Ghent with the public library, the University of Ghent, IMEC (a knowledge institute around technology) and numerous other civil society organizations (NGOs). Comon is a living lab organization that collects societal challenges in order to reformulate them into concrete problems and generate solutions that are tested and evaluated. This

35 Bergvall-Kåreborn, B., Eriksson, C. I., Ståhlbröst, A., & Svensson, J. (2009). “A Milieu for Innovation: Defining Living Labs.” *ISPIIM Innovation Symposium: 06/12/2009-09/12/2009*.

36 Fauth, J., De Moortel, K., & Schuurman, D. (2024). “Living Labs as Orchestrators in the Regional Innovation Ecosystem: a Conceptual Framework.” *Journal of Responsible Innovation*, 11(1). <https://doi.org/10.1080/23299460.2024.2414505>

37 Brown, T. (2009). *Change by Design: How Design Thinking Creates New Alternatives for Business and Society*. Harvard Business Press.

38 Meyer, M. (2010). “The Rise of the Knowledge Broker”. *Science Communication*, 32 (1), 118–127. <https://doi.org/10.1177/1075547009359797>

procedure offers a learning process for all actors involved. Recognized by URBACT as a good practice, Comon demonstrates how open collaboration can successfully bridge diverse perspectives and drive innovation (“<https://urbact.eu/good-practices/comon-open-collaboration-lab>”) Hosted in the public library De Krook, Comon creates spaces where citizens, researchers, companies, and policymakers co-create technological responses to complex social issues, such as mental well-being or sustainable mobility. Each cycle starts with deep listening to urban challenges, followed by design sprints that translate diverse perspectives into tangible prototypes. Throughout the process, dedicated coordinators act as brokers who align expectations and sustain momentum. Comon does not treat collaboration as an add-on but embeds it in the DNA of problem-solving. An academic evaluation of the program highlights its capacity to generate meaningful outcomes across six domains: skill capacity enhancement, network capacity enhancement, knowledge capacity enhancement, instrumental capacity enhancement, agenda setting, and real solution generation (Robaeyst et al., 2023)<sup>39</sup>.

Whether organized in a program such as Comon or not, and individually or collectively, citizens, researchers, companies, and policymakers may also draw on the following methods for analysing and re-imagining cities:

**Reading Scripts – Getting the Story Straight:** The analysis of community-based scripts and their complex sets of authors, participants, listeners and opponents offers guidance for urban geographers and urban studies scholars and students from the social sciences, but also to urban planners and developers and citizens, especially when they find themselves in vulnerable situations. Script analysis clarifies, first of all, that there is never a single creator of a pervasive script. Hence, flipping unproductive or harmful scripts becomes easier, if you can find a community of practice that is willing to attempt re-scripting. In a second step script analysis suggests to everyone involved in the attempt to flip the script which concrete elements need to be studied and heeded when engaging in pragmatic/real-world storytelling.

This new form of storytelling for better urban futures offers much more than alternative forms of documenting and accompanying planning processes: grounded in an understanding of a city’s present-day state and heritages, the method allows the new vision to resonate more strongly with the interests of citizens, stakeholders and vulnerable groups (examples to be found in Buchenau et al. 2023)<sup>40</sup>. It encourages them to keep working towards acceptable regulations or even sustainable solutions even when projects fail. Combining scripting with co-creation, collective action and service

39 Robaeyst, B., Van Hansewyck, N., Baccarne, B., abd Schuurman, D. (2023). “A Qualitative Analysis of the Value Creation of Urban Living Labs.” *International Journal of Innovation Management*, 27 (5), 2340007. <https://doi.org/10.1142/S1363919623400078>

40 Buchenau, B., Gurr, J.M., and Sulimma, M. eds. (2023). *City Scripts: Narratives of Postindustrial Urban Futures*. Columbus: Ohio State University Press. DOI: [10.26818/9780814215524](https://doi.org/10.26818/9780814215524) [Open Access](#).

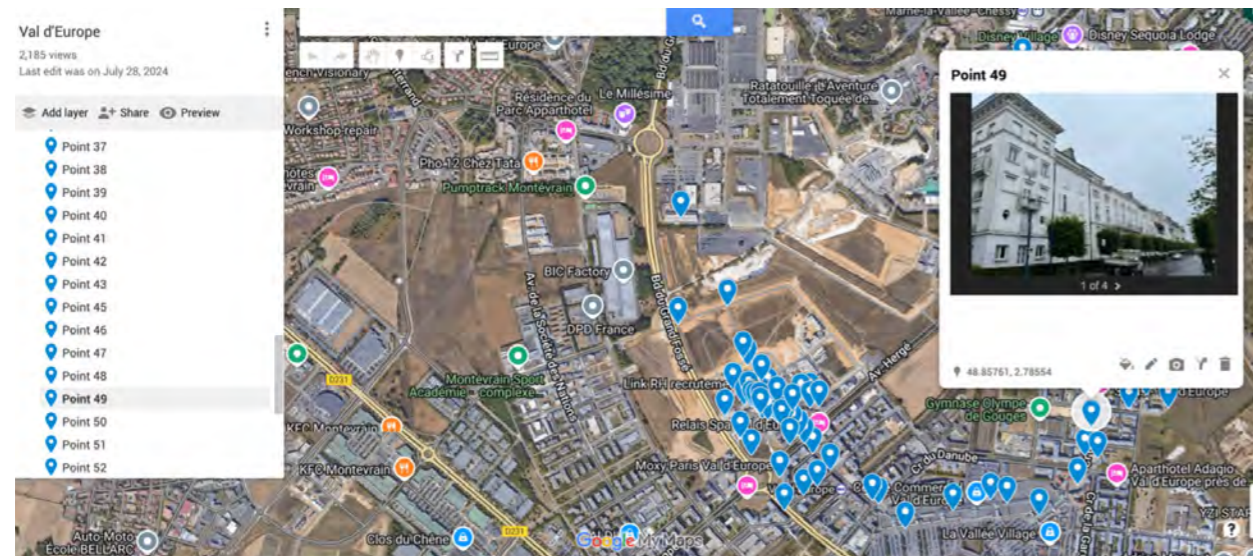
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An academic evaluation of the program highlights its capacity to generate meaningful outcomes across six domains: skill capacity enhancement, network capacity, enhancement, knowledge capacity enhancement, instrumental capacity enhancement, agenda setting, and real solution generation.

learning can also foster citizen participation, community agency and social inclusion (examples discussed in Ameel et al. 2023: 79-83)<sup>41</sup>. A detailed understanding of the ways in which narratives of and about vulnerable citizens script the futures of these citizens and their neighborhoods will enhance a city's ability to plan ahead and address the needs of its citizens.<sup>42</sup>

#### Reading Places – Establishing Cohesion in Messy Spaces:

Theming, too, may also be used as a concrete method to analyse and re-design a given space. Conceived as a method, theming involves doing field work and taking into account not just the built environment but all “sensory environmental stimuli (visual, aural, tactile, olfactory)” in a given space in order to determine how they interact and why they potentially unsettle the city dwellers or why they put them at ease. Here is an example of such a field work on theming:



Personalized googlemaps such as the one above ([https://www.google.com/maps/d/u/0/edit?mid=1C09VhYSdHNXdVg8i\\_E1ss1d0dD6mnl4&ll=48.85844776787977%2C2.761674076544285&z=14](https://www.google.com/maps/d/u/0/edit?mid=1C09VhYSdHNXdVg8i_E1ss1d0dD6mnl4&ll=48.85844776787977%2C2.761674076544285&z=14)), created on-site during a 2024 field trip to the themed city of Val d'Europe (France), allow the researcher and the student engaging in

41 Ameel, L., Gurr, J.M., and Barbara B. (2023). *Narrative in Urban Planning: A Practical Field Guide*. Bielefeld: transcript. 146 p. DOI:10.14361/9783839466179. [Open Access.](#)

42 A prominent example in the U.S.A. is the Confluence Lab in which writers and artists as well as university researchers in the humanities work with firefighters in the Pacific Northwest to come to terms with the immense threat posed by climate change. This „artists-in-fire“ collaboration also accounts for the sense of community, giving an ear and a voice to those who are threatened by fire and who often do not believe that climate change is something that they can do something about. <https://www.theconfluencelab.org>. A prominent European example is the local city stories project of the Nordic Cities Network that seeks to enable seeing, understanding and changing urban neighborhoods via participation in narrative processes: <https://nordiccitiesnetwork.com/news/the-art-of-storytelling-in-city-making/>.

such a field work to tie photographs and notes to a specific geographical location in order to document the visual and auditive appearance of a particular (urban) space at a certain point in time for future reference.

Theming as a method also involves conducting textual analyses of representations of the space (e.g., websites, tourist brochures etc.) that may impact the way people approach a particular site even before they set foot in it, the way they experience it while they are there, and the way they remember it afterwards. The point in theming is not to decide whether an intended script has been successfully implemented but to identify what script(s) a particular (urban) space currently promotes and, consequently, what cognitive, behavioral, and emotional responses it invites and calls for.

As a design technique, meanwhile, theming has expanded to virtual and augmented reality spaces, especially in the themed entertainment industry (e.g., concepts such as Yullbe or Coastality). Through virtual theming, indistinct and potentially disorienting spaces may be temporarily themed based on a choice of scripts while spaces that are already themed may be rethemed based on slightly altered or even entirely new scripts. Virtual theming also allows for a broad range of interactive features, including personalization and gamification. Within the realm of public spaces and urban planning, virtual theming may thus not only serve as a testing ground for various theming scenarios in the planning and research phase but also a way to adjust urban spaces to the specific needs of individual persons and vulnerable groups.

**Storytelling – Becoming Part of a Possible World:** Whenever city scientists work with storytellers, narrative analysts, citizens and urban planners, they can promote a “transdisciplinary narratology” that allows for a sense of cohesion and orientation in otherwise messy cities. By linking expertise of the art of storytelling (narratology) and the art of city building, these teams of scholars, researchers, students, planners, artists and city dwellers can develop a “colloquial art of crafting connective tissues between an emotionally charged past, a contentious present, and an anticipated future” (Sulimma et al. 2023)<sup>43</sup>. This kind of narratology brings together many disciplines to investigate the “repertoire” of daily activities; it takes into account how powerful texts are impersonated and it investigates the “archive” of stored texts, conceptual frames, and materials, reading the often-seamless assemblages of “written” and “embodied culture” through a decidedly urban lens.<sup>44</sup> It investigates in detail how materiality,

43 Sulimma, M., Buchenau, B., and Gurr, J.M. (2023). “Introduction: *City Scripts in Urban Literary and Cultural Studies*.” *City Scripts: Narratives of Postindustrial Urban Futures*. 1-24. DOI: [10.26818/9780814215524](https://doi.org/10.26818/9780814215524) [Open Access.](#)

44 Taylor, D. (2003). *The Archive and the Repertoire: Performing Cultural Memory in the Americas*. Duke UP, 16. Bernstein, R. (2009). “Dances with Things: Material Culture and the Performance of Race.” *Social Text* 27 (4:101), 67-94.

mediality, time, space, and people interact in concrete settings and how some parts of the urban population lose orientation and a voice in the process. In doing so, transdisciplinary narratology can improve a critical understanding of a specific city itself, just as much as its inhabitants, their shared history, present, and future. To analyse the large variety of texts, media and figures that tell stories in the city is to critically engage with a contentious art of understanding at work in such storytelling.

### **Finding Responsive Audiences – Citizen Neuroscience against the Urban Mental Health Crisis:**

As researchers and practitioners in the field of mental health listen to the stories their patients tell, they recognize the challenges we face: urbanization enhances the difficulties of developing design and planning approaches that focus on prevention and the genesis of health rather than on intervention after illness has become prevalent (see Moebus 2022<sup>45</sup>; Schroeder & Moebus 2023<sup>46</sup>; Schroeder et al. 2022<sup>47</sup>; Misiak et al. 2025<sup>48</sup>). Unheard stories of loneliness are the common core of the urban mental health crisis. Psychiatrists united in the EPA are ready to make a substantial contribution by helping to shape the European agenda for Urban Mental Health and look for networks that can reinforce the vision of their professional association. Members of the European Psychiatric Association's Public Mental Health section are currently starting to collaborate on a project to make the vulnerable populations in their cities more visible and to document their self-descriptions in a systematic manner (van Husen et al. 2025<sup>49</sup>; Misiak et al. 2025<sup>50</sup>). The project uses the self-sufficiency matrix developed in Amsterdam (Lauriks et al., 2014<sup>51</sup> and Fassaert et al., 2014<sup>52</sup>) which visualizes responses

45 Moebus, S. (2022): "Concept and Methods in Urban Public Health." In: Jens Martin Gurr, Rolf Parr und Dennis Hardt (eds.): *Metropolitan Research. Methods and Approaches*. Bielefeld, Germany: transcript Verlag, 249–272.

46 Schröder, J., Moebus, S. (2023): "Klimawandel und Gesundheit aus Sicht von (Urban) Public Health." In: *GuS 77* (4-5), 36–40. DOI: 10.5771/1611-5821-2023-4-5-36.

47 Schröder, J., Moebus, S., Skodra, J. (2022): "Selected Research Issues of Urban Public Health." In: *IJERPH 19* (9), 5553. DOI: 10.3390/ijerph19095553.

48 Misiak B, Karska J, Kowalski S, Courtet P, Volpe U, Schouler Ocak M, Destoop M, Adorjan K, Kraxner F, Buwalda VJA, Campion J, Beezhold J, Falkai P, Dom G (2025). Urban mental health: a position paper of the European psychiatric association. *European Psychiatry*, 68(1), e127, 1–15 <https://doi.org/10.1192/j.eurpsy.2025.10100>

49 van Husen, G., Burger, T. J., de Koning, M. B., de Wit, M. A. S., Segeren, M. W., & Beekman, A. T. F. (2025). „Needs of the Network: A Qualitative Study of the Needs of Family Members, Partners and Close Friends of People with a Severe Mental Illness (SMI).“ *BMC Psychiatry*, 25 (1), 220. <https://doi.org/10.1186/s12888-025-06607-8>

50 Misiak B, Karska J, Kowalski S, Courtet P, Volpe U, Schouler Ocak M, Destoop M, Adorjan K, Kraxner F, Buwalda VJA, Campion J, Beezhold J, Falkai P, Dom G (2025). Urban mental health: a position paper of the European psychiatric association. *European Psychiatry*, 68(1), e127, 1–15 <https://doi.org/10.1192/j.eurpsy.2025.10100>

51 Lauriks S, de Wit MAS, Buster MCA, Fassaert ThJL, van Wifferen, Klazinga (2014). "The Use of the Dutch Self-Sufficiency Matrix (SSM-D) to Inform Allocation Decisions to Public Mental Health Care for Homeless People." *Community Ment Health J*. DOI 10.1007/s10597-014-9707-x.

52 Fassaert ThJL, Lauriks S., van de Weert, S., Theunissen, J., Kijjert, N., Dekker, J., Buster, MCA, de Wit, MAS (2014). "Psychometric Properties of the Dutch Version of the Self-Sufficiency Matrix (SSM-D)." *Community Ment Health J*. DOI 10.1007/s10597-013-9683-6

to a standardized questionnaire and provides insights into the needs of vulnerable citizens. This instrument is currently being used in Amsterdam, Rotterdam, Antwerp, Barcelona and some other places in Europe.

The Amsterdam study on de-institutionalization („Ambulantisering“) shows that the most important unmet care needs of people with a serious mental illness (SMI) are related to social rehabilitation, as a result of the fact that loneliness in this group with SMI is enormous (77%), that the social network is much smaller than that of other residents (de Wit et al., 2014)<sup>53</sup> and that their stories accordingly are rarely heard.

Attending to these stories indicates mutual reinforcements between the social environment (the public health services) and the mental health environment (Mental Health Care). Most patients with mental health care issues live in a society that is marked by slackening social ties and a decreasing importance of urban health care institutions (van Husen et al. 2025)<sup>54</sup>. Given a lack of both public health services and mental health care services, they are less able to take care of themselves and to voice their concerns. Their participation in society is even more impaired when they also suffer from addiction, finding themselves as objects of storytelling rather than as storytellers themselves. If we seek to enhance the resilience of society as a whole it is important to develop responsive audiences in a robust system of public urban health, take (better) care of the needs of the vulnerable people, strengthen their voice and help them to enhance their quality of life and become part of society again.

Developing audiences for stories rarely told in public will improve the critical understanding of the urban mental health crisis. With a better representation of the stories told by the most vulnerable members of the city a foundation is set upon which service learning, bridge-building, re-theming and other examples mentioned in this chapter can be used to find viable pathways into healthier futures together. As the example of BioMEGA, the Thessaloniki gateway to brain science and citizen innovation described in the yellow page demonstrates, the definition of active patient roles in City Science projects can vastly improve the dynamics that drive urban health rather than illness. Promoting cities as testbeds for the kind of values, dreams and practices that are truly future-proof must first and foremost enhance the quality of the lives of the most vulnerable city dwellers, fostering inclusive participation in society and thereby making society more resilient as a whole.

53 De Wit M., van Husen G. et al. (2014). *Living in the Neighborhood with a Serious Mental Illness. Recovery and Support of Amsterdammers with an EPA and their Loved Ones*. Amsterdam.

54 van Husen, G., Burger, T. J., de Koning, M. B., de Wit, M. A. S., Segeren, M. W., & Beekman, A. T. F. (2025). „Needs of the Network: A Qualitative Study of the Needs of Family Members, Partners and Close Friends of People with a Severe Mental Illness (SMI).“ *BMC Psychiatry*, 25 (1), 220. <https://doi.org/10.1186/s12888-025-06607-8>

The most important unmet care needs of people with a serious mental illness are related to social rehabilitation.

### 3. Minding Detail to Move to the Larger Picture

Scale is key when addressing a concrete urban need. The smaller the scale, the better the chance of building trust. But as the Citizen Neuroscience initiative and the case of the Thessaloniki gateway to brain science and citizen innovation demonstrate, substantial improvements are equally achieved by systematic, large-scale interventions. We hope to have shown that it is not possible to use storytelling and scripting, nor theming as straightforward methods to build trust. Instead, it is the collaborative and co-creative analysis of these more or less public forms of communication and of these forms of symbolic action that can yield the best results in trying to understand and effectively address a concrete wicked problem. Whether it is governments or political parties acting in bad faith, people of one large group of the population forming opinions about other groups (like the elderly population, or people with severe mental illnesses) or people operating in the capacity of larger systems pressuring those who work under them: in larger groups distrust travels more quickly and the symbolic use of language, stories and images is key in this formation of distrust. In smaller towns and rural communities, but also in small teams of learners or researchers it is much easier to establish a common ground. On a larger scale, texts, rules and regulations about who has a right to speak and who has a right to be heard at what point in the conflict or the planning process add to the stories that people tell each other about the place in which they live. Incongruence between these distinctive forms of discourse and storytelling can thrive and this incongruence deserves to be kept in mind.

While people are often influenced by media, even, and especially when they work together across the divide between universities and their cities, critical analysis can be used to better understand and anticipate mediated communication and to allow meaningful debate when people become engaged on a personal level. Informal conversations and anecdotes suddenly become key again, since they connect us as people, while presentations and monologues can often separate members of the audience. In small-talk scenarios you can find similarities, affirming a shared common existence in the same realities. In the act of small-talk, a reality emerges that the talkers can more or less agree on. This becomes crucial wherever people access a wide variety of sources to pick up the news and the latest developments in their city. So maybe an important, albeit miniscule part of one path forward into effective methodologies for urban needs is getting people to talk to each-other face to face. Working from smaller units to bigger ones can be part of the solution. As our examples hope to suggest, there is immense power in taking smaller, immediate action and in listening carefully when people revel in stories that are often not easy to digest or decipher.

Critical analysis can be used to better understand mediated communication and to allow meaningful debate.

# WORKSHOP Storytelling

ESSEN 2025 -  
PROMU



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ÉCOLE  
D'URBANISME  
DE  
PARIS

UNIVERSITÄT  
DUISBURG  
ESSEN  
Offen im Denken

AURORA

Aurora workshop on storytelling and action plans for urban transitions.

The goal was to develop a vision for downtown Essen 2050. Photo: Marcus Zepf, University Paris-Est Créteil.

Sebastian Schlecht, lala.ruhr  
TU Dortmund University

## Creating positive cities – Hope is to be done!

**A project by lala.ruhr and TU Dortmund University – Urban Design Unit, in cooperation with IABR Rotterdam, the City of Bochum, and with support from the Mercator Foundation.**

We need motivation to shape and develop our cities. However, given the complex local and global challenges we face, the search for validation for our actions often reveals our powerlessness. Nonetheless, we wanted to translate the question of hope as a fundamental motivation for our actions into concrete positive options for action in this project. Passivity is not a solution, and trying to retreat into habits is not helpful. Hope as something we can shape?

Our cities are in a state of constant change that we can influence. They are catalysts for our actions

and our relationships. Goods, resources, culture, nature, energy, emotions, and communities intertwine here and have an impact - on our neighborhoods, our environment, our coexistence, and our planet. "Creating positive cities" requires that the effort we put in anyway has a generally positive effect - and that harmful "side effects" that jeopardize our future are eliminated.

### The nature of hope as a starting point

What if we focused on making a positive contribution? Cleaning the air, water, and soil, promoting biodiversity, generating more energy than we consume, and strengthening communities? As part of the International Architecture Biennale Rotterdam IABR "Nature of Hope," we worked with architect Vincent van der Meulen and his concept "Building

with a Positive Footprint" in an intensive workshop phase to develop and present a framework for action for positive cities.

### Townhall, shopping, red light, steelwork, future?

In cooperation with the city of Bochum, the project then focused specifically on a current development area in downtown Bochum, a large city in the heart of the Ruhr metropolitan region. The planning area offers a multifaceted and contradictory mix that could hardly be more diverse. Full of stories and actors, it is at the same time a reflection of the transformation of the city and the region and the continuity and disruption that this transformation entails.

A stone's throw from the bustling shopping street in the city center and the town hall lies the site of a steelworks that has been in

production since 1841, encircled by railroad tracks and a park, which is now to be partially integrated into the city and redesigned. The access road crosses a residential neighborhood and a historical red-light district. The residents and uses of the area could hardly be more diverse and contradictory in a 500 meter range, reflecting the situation in many places throughout the Ruhr metropolitan region and other industrial cities around the world.

### From ambition to action! How do we design cities that improve the world?

This project has resulted in a conceptual toolbox for positive cities, which will be used in further projects. We analyzed the initial situation, relationships, and our options for action in eight different areas:

people, food, soil, water, nature, energy, resources, and air. To make things even better.

### Visions and motivation meet the real challenges of a big city

Intensive group work resulted in urban planning and strategic proposals on how the area and its residents can develop in a positive and future-oriented manner and connect with the surrounding city and the residents and users of neighborhoods. Interviews and site visits were used, as well as geodata, drone footage, and VR technologies to understand the existing situation and present the concepts and their impact. Together with the city administration, the results were presented and discussed publicly, providing an inspiring and well-founded basis for further planning in Bochum and developing transferable blueprints for other cities.

Text and concept: Sebastian Schlecht (lala.ruhr) further involved at TU Dortmund University: Prof. Renée Tribble, José Londono, Uwe Grützner

Students: Johanna Eickelmann, Johanna Rüter, Greta Wegmann, Chantal Zankow, Felix Böddeker, Lilly Keßling, Felicia Weingardt, Lars-Fabian Wynands, Henriette Frye, Jonas Niemeyer, Anna Vogel, Chenyu Zhu, Lilly Lingener, Carla Remor, Junqiu Zhu

Links: [www.lala.ruhr](http://www.lala.ruhr)

Photos: © Sebastian Schlecht



Site visit to a former steelworks production site in Bochum



Workshop at the International Architecture Biennale Rotterdam on the "Nature of Hope"



Positive city vision by Henriette Frye, Jonas Niemeyer, Anna Vogel and Chenyu Zhu as result of the site visit, workshop and creative design phase.

Marcus Zepf  
University Paris-Est Créteil, France

## The Autopoiesis Approach of the E-City Research Program

### Gathering Relevant Knowledge about Urban Health and Well-being

The interdisciplinary research program *E-city: Explore, Experiment and Engage with better health in the city*, a long-term university program at the University Paris-Est Créteil, was established in 2020 with a focus on intersectionality dynamics in planning and urban health. Drawing conclusions from interviews with project leaders and professionals, survey data, and participant observation, the E-City program provides valuable lessons for a new generation of planners committed to intersectional approaches to urban health planning. Thus, the key objective is to establish a public health monitoring system in urban areas, creating an 'urban cohort' as a living laboratory for citizen science and open science that includes developing a data platform to collect, utilize, and share information. The E-city program is based on a holistic approach to urban health, seen as a vision of a system and a set of guiding principles (autopoiesis). The autopoietic approach follows an "abductive" epistemological logic as a continuous process of gaining knowledge and refining practices through learning by doing and reflecting on experience (Aliseda, 2006). This approach is rooted in embracing and navigating

uncertainties rather than tending to control or eliminate them. It acknowledges the impossibility of fully predicting the future but encourages a reflective approach to action. The vision of a system that evolves through learning and reflective practice is implemented through citizen participation, intersectoral and interdisciplinary cooperation, and the deliberate attempt to co-produce interdisciplinarity and transdisciplinarity within public policies. (E. Lissandrello, M. Zepf, 2024).

Within the *E-City* programme the autopoietic approach helps to diversify and test methods of collecting quantitative and qualitative data (surveys, observations workshops and citizen science labs) and hereby to improve the nature and quality of existing urban health data. Often, data exists but is too fragmented, scattered across multiple authorities, institutions and organisations, and collected temporarily on a project-by-project basis, and may only be partially usable.

Key methodological questions are: What is the scientific significance of this data collected using a less cumbersome and faster survey method? Can this data serve as an effective indicator for identifying emerging health and well-being issues? Are these indicators sufficiently concrete and representative to serve as scientific hypotheses

for implementing research projects capable of further exploring these health and well-being issues? What are the prospects for the legislative framework for data protection and knowledge production in the field of urban health and population well-being? Finally, how to develop a coherent experimental methodology that is capable not only of articulating existing and validated questions, but also of capturing societal transformations?

These questions open up interesting perspectives on the relationship between the secure data protection framework and the flexibility of question formulation from a methodological experimentation perspective, but also in terms of identifying emerging topics, particularly in multidisciplinary quantitative health surveys. These tests thus provide a useful methodological context to plan and design future waves of surveys — among student populations or the general population — enabling frameworks that can safeguard correct identifications of new forms of social inequalities in health in urban areas.

**Un programme de recherche sur la santé des populations en milieu urbain**

- Une approche holistique de la santé.
- La volonté de créer les conditions d'observation des trajectoires de santé des populations en milieu urbain, et d'animer l'avancée des connaissances autour du triptyque « santé-ville-environnement ».
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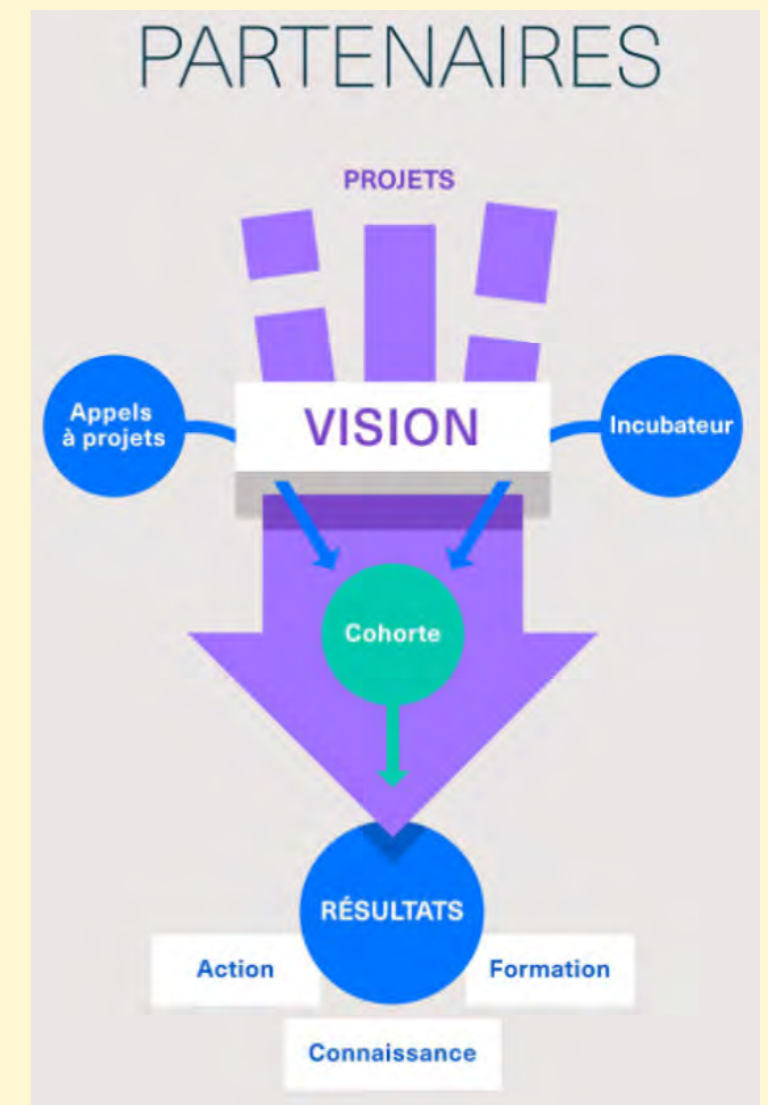
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The project scheme of e-city

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## Thessaloniki – BioMEGa: Gateway to Brain Science and Citizen Innovation

The BioMEGa Unit at the Aristotle University of Thessaloniki (AUTH), located within the University General Hospital of Thessaloniki AHEPA, is the first Optically Pumped Magnetoencephalography (OPM-MEG) laboratory in Southeastern Europe. It places Thessaloniki at the forefront of advanced brain science and participatory innovation, bridging cutting-edge research, clinical care, and citizen engagement.

BioMEGa uses non-invasive, silent, and radiation-free technology to capture the brain's magnetic fields in real time with millisecond precision. This enables accurate mapping of brain networks for cognition, language, movement, and emotion, supporting better diagnosis and treatment planning for epilepsy, brain tumors, multiple sclerosis, neurodevelopmental disorders, and dementia.

More than a high-tech lab, BioMEGa is an open innovation ecosystem for Thessaloniki. Through workshops, open days, and citizen-science projects, citizens — from students curious about how their brain learns to patients contributing to personalized treatments — are invited to engage with neuroscience in an inclusive, meaningful way. Beyond

scientific excellence, BioMEGa embraces the concept of citizen neuroscience — inviting citizens to actively participate in brain research not just as subjects but as co-creators of knowledge. This approach fosters public understanding of the brain, reduces stigma around mental health, and creates opportunities for citizens to engage in practices that promote emotional resilience and psychological well-being.

By integrating its capabilities with citywide initiatives in digital health, sustainable living, and education, BioMEGa delivers evidence-based solutions that are scientifically rigorous, socially relevant, and locally impactful. In this way, BioMEGa contributes to a city ecosystem where neuroscience informs not only hospitals and universities, but also schools, workplaces, and cultural institutions. This integration supports preventive strategies for stress, anxiety, and cognitive decline, strengthening Thessaloniki's capacity to promote mental health and collective well-being.

BioMEGa strengthens Greece's presence in the European research landscape and enhances Thessaloniki's role as a regional hub for neurotechnology and

precision health. It attracts international collaborations, clinical trials, and educational programs, linking the city with leading scientific networks worldwide.

BioMEGa represents a new model of urban science — open, inclusive, and deeply connected to the community it serves. By turning complex brain research into actionable knowledge, it empowers citizens, clinicians, and policy-makers to co-create a healthier, smarter, and more resilient future. cities can lead the way towards a brighter, more sustainable future.

### Facility Facts

Established: 2024

Hosted by: Lab of Medical Physics and Digital Innovation, School of Medicine, Aristotle University of Thessaloniki (AUTH)

Location: University General Hospital of Thessaloniki AHEPA

Social profile: [https://www.facebook.com/profile.php?id=61569591904361&locale=el\\_GR](https://www.facebook.com/profile.php?id=61569591904361&locale=el_GR)

Team:

Director: Prof. Panagiotis Bamidis

Lab Manager: Dr. Charis Styliadis

PhD Students: Georgia Kioselaki, Alexandra Anagnostopoulou

MSc Students: Nefeli Tsoukaki, Smaranta Ketseridou

Webpage: <https://imedphys.med.auth.gr/project/biomega>

### Research & Clinical Focus

BioMEGa focuses on a range of domains including cognitive health, aging and well-being, brain plasticity and neurorehabilitation, neurodegenerative disorders (such as multiple sclerosis and Alzheimer's disease), developmental disorders (such as autism and ADHD), and emotional processing. Clinically, the facility supports pre-surgical mapping in epilepsy and brain tumors, functional mapping in multiple sclerosis and dementia, and advanced network analyses for rehabilitation and precision interventions.

### Citizen Science & Engagement

Citizen science is central to BioMEGa's mission. Planned initiatives include public open days to experience MEG technology, school

workshops to introduce students to brain science, and community-driven research pilots where citizens contribute valuable data on cognitive health, lifestyle, and well-being. Citizen neuroscience activities also extend to mental health awareness campaigns, mindfulness and stress-management workshops, and interactive experiences where citizens can learn how lifestyle choices — such as sleep, exercise, and social connection — affect brain health. By engaging people directly, BioMEGa empowers the community to adopt healthier habits, reinforcing Thessaloniki's identity as a city that invests in the mental well-being of its citizens.

### Collaborations

BioMEGa partners nationally with AHEPA Hospital clinical departments, MS clinics, and regional rehabilitation centers. International collaborations include partnerships with Cerca Magnetics (UK), Euro-BioImaging, and Brain health projects in Spain, Finland, the US and Canada. This global network positions Thessaloniki as a hub for neurotechnology and precision health.

### Impact Highlights

- **Training Hub:** Educating PhD, MSc students, and clinicians in advanced neuroimaging and neurotechnology.
- **Precision Healthcare:** Supporting data-driven clinical diagnosis and personalized interventions.
- **Research Excellence:** Participation in high-impact European research networks and Horizon Europe proposals.
- **Urban Science Integration:** Using health data and brain research to drive city-level innovation and policy solutions.

Ultimately, BioMEGa demonstrates how cutting-edge neurotechnology, when combined with citizen science, can help cities design healthier environments, strengthen social cohesion, and improve overall quality of life. Thessaloniki thus becomes not only a gateway to brain science but also a living laboratory for citizen-driven well-being innovation.

Tom Van Nieuwenhove, Jeroen Bourgonjon, and Line Windey  
City of Ghent

## Ghent

### Comon as a civic–academic–public ecosystem for human-centred innovation

In the city of Ghent, a broad innovation ecosystem has emerged in which public institutions, research organisations, companies and citizens collaborate to address societal challenges. Within this landscape, **Comon** functions as an open innovation environment that links technological exploration to lived urban realities. Established through a partnership between the City of Ghent, Ghent University, the knowledge institute IMEC and the public library De Krook, Comon operates at the intersection of policy, research and civic life, enabling knowledge exchange and experimentation across disciplines.

Ghent hosts a dense cluster of universities, research groups, cultural institutions and civic organisations, creating favourable conditions for collaboration. Comon leverages this proximity by structuring innovation processes around concrete, locally identified needs. Challenges are collected directly from residents, frontline professionals and community stakeholders. These inputs form the basis for a systematic exploration of underlying problems through interviews, fieldwork, thematic sessions and interdisciplinary analysis. In this approach, citizens, researchers,

policymakers, entrepreneurs and technologists jointly articulate problem definitions that transcend sectoral boundaries.

Comon applies **design thinking** as a guiding methodology, progressing from challenge identification to ideation, prototyping and real-life testing. The initiative facilitates co-creation workshops and make-a-thons in which multidisciplinary teams develop early, low-threshold prototypes that explore possible solution pathways. These prototypes—ranging from communication tools for healthcare to digital assistants and smart devices—are tested directly in the urban environment. Residents, patients, care providers and community groups give feedback in public experiment cafés, allowing rapid iteration and grounding technological solutions in everyday practice.

Operating as a **bridge organisation**, Comon creates new connections between health and wellbeing, digital literacy, social innovation, public services and academic research. The initiative helps translate complex technological developments into accessible formats, enabling non-experts to participate meaningfully in innovation trajectories. At the same time, experts gain insights into the experiences, constraints and

expectations of citizens, which informs future research agendas and policy design.

Several prototypes that emerged from Comon illustrate this dynamic. Digital tools that simplify medical information, systems that support communication between patients and care professionals, and devices that allow vulnerable groups to monitor or express health needs demonstrate how technology can increase accessibility and autonomy when developed with users rather than for them. These examples show how co-creation contributes to improved service delivery and strengthens trust between institutions and residents.

Comon also functions as a **learning infrastructure** for the city. Each innovation cycle includes structured reflection, involving all partners—municipal departments, researchers, practitioners, entrepreneurs and citizens. These evaluations identify the conditions under which co-creation is effective, such as shared ownership, a safe experimental space, interdisciplinary facilitation and the presence of “brokers” who support collaboration. The lessons inform subsequent cycles and contribute to a growing body of knowledge on civic-driven innovation.

Beyond individual prototypes, Comon’s contribution lies in reinforcing Ghent’s broader transition agenda: strengthening inclusive participation, advancing human-centred technological development, and supporting innovation literacy among residents and organisations. Activities such as public dialogues, neighbourhood-based engagements and accessible storytelling make innovation processes visible and invite wider civic involvement.

Comon’s ecosystem offers several insights relevant to cities pursuing ESG-aligned development:

- **Interdisciplinarity is essential:** societal challenges require the involvement of diverse knowledge domains and lived experiences.
- **Early prototyping accelerates learning:** simple, testable solutions enable rapid feedback loops and reduce the risk of misaligned investments.
- **Citizen participation enhances relevance:** engaging residents throughout the process ensures solutions reflect actual needs and constraints.

- **Brokerage roles support continuity:** dedicated facilitators strengthen coordination across public, private and civic partners.

- **Open communication builds trust:** transparent sharing of methods, results and uncertainties fosters a culture of joint responsibility.

Through these mechanisms, Comon demonstrates how local ecosystems can mobilise creativity, research capacity and civic engagement to address complex urban issues. Its model illustrates the potential of city-regional partnerships to co-produce knowledge, strengthen public services and develop socially robust technological innovations.

As Ghent continues to invest in collaborative innovation infrastructures, Comon provides a practical framework for linking experimentation to long-term urban transitions. It exemplifies how cities can cultivate resilient, inclusive and knowledge-driven communities by positioning citizens as partners in shaping the future.

# Methods in City Science, Briefly Explained

**Glossary of City Science Methodologies**, Nanke Verloo and Luca Bertolini, University of Amsterdam.

**Source:** these are direct citations of items listed in the “Glossary” in *Seeing the City: Interdisciplinary Perspectives on the Study of the Urban*, ed. Nanke Verloo and Luca Bertolini, Amsterdam University Press, 2020, 272-286, selected by Barbara Buchenau, University of Duisburg-Essen.

## Abductive reasoning.

A form of reasoning or logical inference that starts with an observation or set of observations and seeks to find the most likely conclusion from those observations, a conclusion which is plausible but not proven. This differs from deductive and inductive reasoning.

## Action research.

Refers to a research philosophy and methodology that aims at transformative change through simultaneously taking action, doing research, and reflecting on the process at hand. It usually includes both scholars and practitioners and is therefore a strategy of transdisciplinary research.

## Aggregate data.

Coarse-grained quantitative or qualitative data that have been compiled into larger spatial units (e.g. postcode areas, regions etc.)

## Anonymization.

The process by which the researcher makes respondents non-identifiable and their identities untraceable in order to ensure their privacy.

## Archival research.

A type of research in which the researcher selects, extracts, and sorts out archival records and evidences.

## Case study.

A research strategy that aims for an in-depth and detailed examination of a particular case in which the unit of analysis may include individuals, organizations, places, or processes.

## Citizen scientists.

People from the public who non-professionally collect, or participate in the collection of, scientifically important data.

## City Science.

A container term that refers to research that happens in, with, and for the city and which is transdisciplinary through all phases of the research process and potentially affects all phases of the policy process.

## Close reading.

A method of analysis that emphasizes the scholar’s active role in constructing a detailed reading and interpreting the text or object actively. It is not receptive but productive; it is an act of writing.

## Co-create.

Refers to the process of collaborative creation, decision making and implementation of projects that may be related to research, but can also be in the domain of policy making or design.

## Co-design.

Refers to the process of collaborative designing, decision making and implementation of projects that may be related to the field of design, but can also be in the domain of policy making or research.

## Critical theory.

A research paradigm in the social sciences and humanities in which critical reflection on and evaluation of society and culture are used strategically to reveal and question existing power structures.

## Cultural analysis.

A discipline in which qualitative methodologies are used to collect and interpret data on cultural phenomena and processes in order to gain further understanding of a given culture.

## Data mining.

The process of finding patterns in a large data set, usually combining machine learning, database systems, and statistics.

## Deductive reasoning.

Contrasts inductive reasoning and starts from one or more premises to reach logical and certain conclusions.

## Deep map.

Refers to a digital map that goes beyond two-dimensional images of places, names, and topography, by adding additional layers of information.

## Designed data.

A category of data such as census, interview, and survey usually designed and implemented by governmental authorities.

## Diary.

A record with discrete entries that ethnographers tend to use to record their experiences, thoughts, feelings, and first interpretations of field research situations. Usually used in combination with Fieldnotes.

## Digital mapping.

The process by which a large amount of data is compiled, synthesized, and reformatted into a virtual image, most often in the form of a map.

## Disaggregated data.

Fine-grained quantitative or qualitative data broken down in smaller units, sometimes even addressing individuals (e.g. a person’s employment status).

## Discourse analysis.

A method of analysis that compiles a representative set of ‘utterances’, which can be written, vocal, or visual, with the aim of revealing patterns, norms, or power relations.

## Driver.

A key factor that largely determines a response variable.

## Ethnography.

A type of social research that relies heavily on participant observation and aims at the qualitative and holistic understanding of cultures, practices, people, and places from the points of view of the subjects of study.

## Fieldnotes.

Qualitative notes of the phenomenon under study recorded by the researcher in the course of field research.

## Heterogeneous.

While all units of a homogeneous product are identical (i.e. with regard to color, shape, size, weight, height, texture, distribution, architectural design, etc.), the units of a heterogeneous product can vary noticeably in these respects.

## Historical simulation.

The process of using computational methods to create working representations of historical scenarios.

## Inductive reasoning.

A form of reasoning that starts with empirical observations and synthesizes general principles from these specific observations without claiming truth but by providing arguments for probability based upon evidences.

## Institutional analysis.

Data analysis strategy which studies how institutions behave and function in terms of empirical rules (norms) and in terms of theoretical rules (law).

## Interdisciplinary research.

Entails the integration of relevant disciplinary contributions, which might involve the theories, methods, and/or the data of the participating disciplines. This integration leads to a more comprehensive insight, which is particularly relevant for complex and dynamic problems.

## Interview guide.

A tool for interviewing that directs the questions or topics discussed during the interview. It can consist of a pre-determined set of questions posed in a

fixed sequence – referred to as structured interviews – or broad, open-ended questions in semi-structured, open, or narrative interviews with an additional item list for probing.

#### **Interview.**

A guided conversation in which the respondent shares their expertise or experiences on a particular topic with the researcher.

#### **Large-n dataset.**

A dataset with a large sample-size. Census data and register data are large-n datasets. May be contrasted with Big Data.

#### **Longitudinal.**

Refers to the study of (a sample of) a population at multiple points in time.

#### **Multidisciplinary research.**

Research that includes the theories, methods, or data from different disciplines. Disciplinary contributions might be presented next to each other, yet without leading to their integration.

#### **Narrative interview.**

Interview technique that seeks to reproduce a storyline of idiographic experiences of the interviewee.

#### **Nonprobability sampling.**

A sampling technique whereby respondents are selected strategically on the basis of particular shared characteristics, rather than randomly selecting respondents from the research population. This technique is based on the notion of (theoretical) saturation rather than aiming for statistical generalization.

#### **Objectivity.**

A philosophical concept that proposes an objective truth independent from individual subjectivity.

#### **Observations.**

The active acquisition of information from a primary source. In social sciences and biology, they are usually done by researchers who employ their own senses, but new technologies allow for observations via sensory techniques.

#### **Open interview.**

A type of interview whereby the interviewer raises broad, open-ended questions and then lets the respondent determine the direction of the conversation. Often used in exploratory research, when the range of possible answers is not yet known to the researcher.

#### **Operationalization.**

The process in the research design that defines the relevant variables so that they may be measured or analyzed. This enables the measurement and interpretation of a phenomenon that is not directly measurable, in order to make it understandable by empirical observations.

#### **Organic data.**

A category of urban data that is generated either through technologies embedded in the urban fabric (e.g. sensors, cameras, etc.) or is the byproduct of people's online activities (e.g. tweets, blog posts, reviews, etc.).

#### **Ownership.**

A complex concept that refers to the exclusive right and control over a property, asset, land, or intellectual property. This could represent a legal entitlement, but it could also refer to an experience or feeling, e.g. the ownership over a place. The concept of ownership is an important topic of empirical research and analyses and should be operationalized in relation to each specific research project.

#### **Paradigm.**

Refers to a set of beliefs and concepts that shape a particular way of making sense of the world. It represents a worldview that defines, for its holder, the nature of the 'world'. It includes theories, research methods, and standards for what constitutes the quality of findings.

#### **Participant observation.**

A data collection methodology that is typically used in qualitative or ethnographic research in which the researcher conducts longitudinal and in-depth fieldwork aiming to gain close and intimate familiarity with a given group, social situation, or place.

#### **Representative sample.**

A sample that shares as many of the characteristics of the population as possible, in order to enable it to represent that population statistically within a certain margin of error.

#### **Sampling.**

Set or subset of observations taken from a broader population

that can be representative for that population (see representative sampling), but can also be deliberately chosen (probability sampling), or can be random (nonprobability sampling).

#### **Self-reporting.**

Refers to the practice of letting respondents record data, usually through questionnaires or diaries, instead of direct observation or recording of the data on the part of the researcher.

#### **Semi-structured interview.**

A type of interview that combines a set of pre-determined questions with open-ended questions.

#### **Semiotics.**

The study of sign processes that social constructivists use to interpret the production of meaning by breaking down a representation – be it a text, an image, or a space – into distinct elements and tracing what these elements mean.

#### **Snowball sampling.**

A nonprobability sampling technique in which existing research subjects are asked to recruit additional respondents among other people they may know.

#### **Spatial patterns.**

A perceptual structure or arrangement of features – and the spaces between them – across space. For example, we can think of spatial patterns such as clustering, dispersion, linear arrangements, random distribution, etc.

#### **Structured interview.**

A type of interview that uses a pre-determined set of questions posed in a fixed sequence.

#### **Thick description.**

In the social sciences and specifically in ethnography, researchers use thick description to make detailed descriptions of human social interaction and human behavior within its context, with the aim of allowing outsiders to understand the situation.

#### **Transcribing.**

The activity of producing a written transcript of a completed oral interview.

#### **Triangulation.**

The strategy of using multiple sources in qualitative research to develop a comprehensive understanding of a phenomenon of study and to test the quality of outcomes via the convergence of multiple sources.

#### **Unit of analysis.**

The entity that is being analyzed within a study, or the entity that is studied as a whole (may be qualitative and quantitative).

#### **Unit of observation.**

A subset of the unit of analysis.

#### **Urban fabric.**

The physical urban environment (including aspects such as streetscape elements, urban blocks, materials, configuration, density, networks) in conjunction with its socio-cultural, ecological, managerial, and economic structures.

#### **Utility function.**

In economics, a utility function is an important concept that represents a consumer's preferences with regard to a set of goods and services. Utility refers to the satisfaction the consumer receives for choosing and consuming a product or service.

#### **Veracity.**

Refers to the unreliability of Big Data, amongst others due to the uncertainty of the boundaries of the population and sample.

# 5 Impact-based Co-Governance:

## Measuring and investing through urban science

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### 1. The EU law and policy framework on impact

The growing emphasis on impact and the development of impact-oriented public policies requires increasingly sophisticated evaluation methodologies aligned with national and supranational normative principles. This represents a crucial component in ensuring that multi-stakeholder collaboration models - as discussed in previous chapters of this fourth City Science Initiative report - can achieve their intended objectives. Within the European legal framework, the correlation between public policy goals, collaboration as a form of partnership, and impact measurement is evident and thus demands further in-depth analysis.

Before focusing on impact itself, it is essential to observe how the entire framework of innovation within the European Union is increasingly and integrally directed toward sustainability, that is, toward the most pressing challenges of our time: the climate crisis and the digital transition, addressed jointly as the “twin transitions”<sup>55</sup>. These transitions, as defined by the European Commission, are operationalized through economic and financial policy initiatives such as the Cities Mission, while also encompassing their social and economic consequences, which most directly affect urban areas.

The principle of sustainable innovation is expressly mentioned in Horizon Europe<sup>56</sup>, the 2021–2027 EU Research and Innovation Programme, which constitutes the largest global investment in this field. Of particular relevance in this regard are Articles 179 et seq. of the TFEU, which promote the creation of a European Research Area - an objective that the Letta Report elevates to a “fifth freedom” within the Single Market (Letta, 2024) - through collaboration among public entities, enterprises,

<sup>55</sup> European Commission, COM/2022/289 final, 2022 Strategic Foresight Report, Twinning the green and digital transitions in the new geopolitical context.

<sup>56</sup> Reg. (UE) 2021/695.

research centres and universities. Especially noteworthy is Article 181, which explicitly sets out as one of the key goals of the EU research and innovation programme the exchange of best practices among research institutions, universities, local administrations, and companies to facilitate replicability and provide useful recommendations to all EU stakeholders, once the impact of a pilot case has been demonstrated.

Horizon Europe thus embodies the EU’s commitment to sustainable scientific innovation and to delivering concrete responses to social needs. The programme is grounded in the idea of sustainable innovation as a fusion of scientific progress and positive societal impact (Iaione 2024). This approach is emphasized in Recital 51 of Regulation (EU) 2021/695, which stresses the need to overcome barriers between science, technology, culture and the arts in order to achieve a new quality of sustainable innovation. The same spirit informs both Pillar III, “Innovative Europe”, and the European Institute of Innovation and Technology, in its role of fostering sustainable innovation ecosystems.

Furthermore, the Regulation explicitly refers to the United Nations 2030 Agenda Sustainable Development Goals (SDGs) in Recitals 2, 10, and 24, recognizing research and innovation as central tools for building not only a sustainable but also an equitable society and economy. The principle of sustainable innovation embedded in Horizon Europe is, moreover, deeply rooted in the broader sustainable development agenda promoted by EU institutions and is intertwined with various other legislative instruments, beginning with the principles enshrined in the Treaties themselves.

Recent initiatives of the European Commission - including the Corporate Sustainability Reporting Directive (CSRD), the Sustainable Finance Disclosure Regulation (SFDR), the EU Taxonomy Regulation, and the Corporate Sustainability Due Diligence Directive (CSDDD) - demonstrate growing attention to the social dimension of sustainability. The CSRD introduces the concept of double materiality, requiring companies to report also on the impact of their activities on vulnerable communities (Delegated Regulation (EU) 2023/2772 and ESRS S3 are also relevant on this point). The CSDDD, in particular Recital 65, calls for sensitivity to the needs of vulnerable stakeholders and to intersectional vulnerabilities, in accordance with UN declarations on the rights of Indigenous Peoples and Human Rights Defenders.

In the domain of sustainable finance and corporate governance, the EU also emphasizes the principle of partnership, aiming to actively involve vulnerable communities in the generation of impacts supported by public investment. The Principles for Responsible Investment (PRI) define stewardship as the use of investor influence to maximize long-term value, including economic, social, and environmental common

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goods. This requires governance mechanisms based on dialogue and benefit-sharing. This approach recognizes certain actors not merely as beneficiaries but also as stewards or co-managers of commons.

This principle lies at the heart of Cohesion Policy as well: Article 174(1) TFEU affirms the objective of harmonious development within the Union by strengthening economic, social, and territorial cohesion, while Regulation (EU) 2021/1060, laying down common provisions on structural funds, incorporates the principle of partnership into its core values, notably in Articles 8 (“Partnership and multilevel governance”) and 31 (“Community-led local development”) (Iaione 2024; Pazos-Vidal 2024).

From this overarching framework - addressing both public and private actors - emerges a pervasive emphasis on impact at all levels of the European legal context, which accordingly exerts strong influence over public policy design. Cities, as key actors in innovation efforts and, at the same time, as arenas where transitions unfold, are therefore the first to require reliable metrics capable of guiding their mission-oriented policies toward producing verifiable local impacts.

## 2. Opportunities for an impact-based co-governance of the city

On the one hand, the effects and impacts of higher-level strategies are most directly experienced in cities; on the other hand, as Ostrom (2010) critically observed, cities must be able to identify and implement concrete solutions to urgent problems immediately, without waiting for the uncertain outcomes of global policies that concern them. This is essential because cities are at the core of a series of economic, institutional, ecological, technological, and digital transitions that must be managed step by step, across all levels, as just transitions, in order to protect the most vulnerable communities and prevent the exacerbation of urban inequalities.

It is thus important to note that the European conception of the city is that of the “climate-neutral and smart city”, or - taken to its logical extreme in response to the aforementioned crises - a self-sustainable and resilient city (Iaione & Bernardi 2023), capable of ensuring to its citizens, and especially to its most vulnerable inhabitants, the highest degree of resilience in the face of critical factors.

What is therefore needed is an infrastructural dimension - both hard and soft - aimed at the production of impact. In other words, legal infrastructures such as municipal regulations, as well as economic, energy, and digital infrastructures, must be structurally oriented toward producing demonstrable positive impact on the community. This, in turn, requires

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that the community be included not only in the selection of the impacts to be achieved, but also in the operational strategies to achieve them, and finally in the processes of data collection, interpretation, and evaluation.

This points to the emergence, at the urban level, of a principle of co-governance, which finds formal recognition in European law through the “partnership principle” explicitly articulated in the EU regulatory framework, and increasingly reflected in European strategies and policies. This principle is based on the idea that no single actor possesses all the resources and knowledge needed to address global challenges, and therefore all actors must contribute to solving them. Hence, the necessity to develop evidence-based and mission-oriented policies, where the mission is, ultimately, the production of specific impacts.

Naturally, especially in the urban context, the idea of co-governance is deeply indebted to a culture of shared care for the commons (Foster & Iaione 2022), and of the city as a common good, rooted in the studies of Elinor Ostrom (1990). In light of the growing need for policies that are both mission-oriented and impact-based, however, it becomes increasingly necessary to define impacts in such a way that they reflect the diverse needs typical of urban life, while ensuring that their assessment is clear, transparent, and as immediate as possible.

Designing an impact-based co-governance strategy, in this sense, means merging a partnership-oriented approach with the production of verifiable impacts. This is useful not only for explicitly and transparently directing such partnerships toward objectives of collective interest, but also represents a key link to the financing dimension.

Indeed, Urban Sustainable Development and Innovation Partnerships (Iaione 2022) constitute a key tool for the implementation of innovative public policies, involving local and vulnerable communities directly in decision-making processes and in the shared responsibility for generating positive territorial impacts. A reliable and comprehensive impact assessment can also attract private investments from companies that are compelled - or at least encouraged - to produce such impacts under the aforementioned European regulations, and it can justify public investment, for example from institutional actors such as the European Investment Bank.

In this regard, the alliance between cities and science becomes once again extremely relevant, and must be further strengthened to conduct such impact assessments and extract policy guidance from them, thereby supporting city officers. This, moreover, is one of the core functions of the City Science Offices established under the City Science Initiative: to support local authorities in identifying the

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most appropriate public policies, analyzing available data, preparing regulatory tools to include citizens in impact assessment processes, and providing specialized expertise on impact evaluation - acting, in effect, as certifying bodies or "ESG Impact Hubs" (Nevejan et al. 2022).



Former Santa Maria della Pietà Psychiatric Hospital, Rome. Co-governance of physical space as a hub for community well-being

### 3. Assessing impact: a multidimensional model

In recent years, the demand for transparency and accountability from stakeholders has gained increasing importance, profoundly transforming how organizations approach their mission and societal role. It is no longer sufficient to generate profit alone; organizations are now expected to demonstrate, through concrete evidence, their real contribution to sustainable development. This shift has made the measurement of social, environmental, and economic impact a central component in shaping corporate strategies and governance, actively engaging actors from the private, public, and third sectors.

It is essential to recognize that the pursuit of sustainability should not be viewed as a constraint or trade-off against financial performance. On the contrary, a growing body of academic research suggests that integrating environmental, social, and governance (ESG) criteria is not only an ethical imperative but also a genuine opportunity for long-term economic improvement. For instance, Serafeim (2022) highlights how companies that align social purpose with profit tend to achieve more stable and superior financial results. This challenges the traditional dichotomy between ethics and business, showing that a sustainability-oriented model can generate shared and enduring value.

At the same time, numerous scholars have strongly criticized the traditional business paradigm centred solely on maximizing shareholder profits. Mayer (2018), in particular, urges a shift beyond this narrow vision, calling for a redefinition of companies as responsible entities capable of actively addressing contemporary social and environmental challenges. This responsibility does not imply sacrificing profitability; rather, it calls for realigning economic goals with more inclusive and sustainable practices that generate tangible benefits for all stakeholders involved.

To enable this cultural and operational transformation, there is a pressing need for more robust and comprehensive evaluation tools and models - ones that can capture not only financial value but also the social and environmental value created by organizations. Mendell (2009) emphasizes the importance of developing metrics that effectively measure social purpose, going beyond traditional economic and financial indicators. Similarly, Sassen (2011) underscores the need for broader performance evaluation criteria for cities, reflecting sustainability and social and environmental equity - key elements for achieving genuine urban and social progress.

Moreover, in the field of sustainable finance, these ideas are gaining increasing traction. Studies by Consolandi and Hawley (2024) propose an innovative approach that integrates the concepts of externalities and materiality into investment evaluations, with the aim of making

the links between corporate economic activities and their systemic impacts on society and the environment more transparent and meaningful. This represents a crucial step toward directing capital toward projects that are not only profitable but also responsible and capable of contributing to large-scale sustainable development.

The growing demand for accountability and transparency is not merely a passing trend, but a sign of a profound shift in how value is conceived within organizations. Moving beyond a purely financial logic and embracing a development model that combines profit with social responsibility has now become a strategic imperative for anyone aiming to operate successfully and meaningfully in today's world.

Within the field of impact measurement, numerous tools have been developed to make the evaluation of social, environmental, and economic effects more systematic, comparable, and transparent. One of the most internationally recognized systems is IRIS+, created by the Global Impact Investing Network (GIIN). This framework aims to provide a standardized foundation for tracking results in the impact investing sector, thereby promoting the harmonization of metrics among investors, implementing organizations, and beneficiaries.

However, despite its widespread adoption—which attests to its practical utility - IRIS+ has not been immune to criticism. Scholars such as Bugg-Levine and Emerson (2011), and more recently Watts and Scales (2020), have questioned the model's overly prescriptive approach. According to these authors, IRIS+ tends to adopt a top-down structure that may not be well-suited for early-stage initiatives or complex local contexts, where rigid indicators can hinder, rather than support, the effective use and ownership of evaluation tools by the stakeholders involved.

These critiques raise a fundamental methodological issue: the tension between standardization and adaptability. While standardization ensures consistency and comparability across projects and regions, it can also limit the ability to respond to local specificities and social complexity. To make impact assessment truly meaningful, frameworks must strike a balance between methodological rigor and operational flexibility. This requires participatory design processes and a greater openness to contextual nuances and realities.

In this regard, sustainability literature identifies two main paradigms of evaluation: the top-down approach, which is quantitative in nature, and the bottom-up approach, which is grounded in community participation. The former relies on expert tools, statistical models, and objective data, proving effective for large-scale analyses. However, it often excludes local communities, leading to results that may lack



Former Santa Maria della Pietà Psychiatric Hospital, Rome. Renovation to re-functionalize the complex for the neighbourhood

contextual relevance. The latter, by contrast, values the perceptions of stakeholders and employs participatory methods to understand phenomena within their local context, but it can be less precise and more difficult to standardize (Bell & Morse, 2001; Reed et al., 2006).

To overcome the limitations of both models, a hybrid approach is proposed—one that integrates quantitative evidence with situated knowledge. This combination enables a more holistic and balanced evaluation, where stakeholder engagement not only enriches the analysis but also contributes to the co-definition of impact criteria. In doing so, inclusiveness and rigor reinforce each other, creating a more robust system for sustainable monitoring.

This methodological orientation mirrors the evolution of European innovation policies, which are increasingly aligned with goals of environmental, social, and economic justice. As Iaione (2024) points out, the inclusion of vulnerable groups and the establishment of multi-actor

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partnerships are essential conditions for the effectiveness of impact-oriented policies. Top-down initiatives, while often guided by well-intentioned regulatory frameworks, risk failing to address the concrete needs of local communities (Mendell & Alain, 2015). At the same time, bottom-up demands - if isolated - struggle to influence policymaking unless they find a way to be translated into institutional language.

This is why it is essential to promote collaborative models of innovation, as demonstrated by European initiatives such as ICLEI (Germany), the ESG Innovation Collective (Berlin), the House of Emerging Technologies (Italy), and the City Science Offices in cities like Amsterdam, Hamburg, and Reggio Emilia. These examples highlight the potential of co-creation and distributed governance in developing impact measurement systems that are truly transformative and capable of generating shared value.

The concept of City Science envisions cities as living labs for experimentation, where innovative, sustainability-driven solutions—such as aquaponics—can be tested and refined. These urban spaces become key arenas for data-informed, place-based collaboration, involving local governments, academic institutions, and citizens (De Nictolis & Iaione, 2023).

According to Iaione (2024), the Just Sustainable Innovation paradigm is based on the integration of nine essential impact dimensions: technology, civil and social rights, economic development, governance, environment, health, territory, culture/education, and intergenerational equity. This comprehensive framework calls for assessment systems capable of coherently and contextually measuring outputs, outcomes, and impacts.

The Transformative Social Innovation Theory (TRANSIT), developed through a European project (Haxeltine et al., 2016; Pel et al., 2020), emphasizes how social innovations, when combined with technological and institutional transformations, can challenge entrenched paradigms. The theory is structured around three key pillars: disruption of dominant models (e.g., circular resource management), active participation of local actors in co-creating change, and the integration of technical innovation, regulatory reform, and collective behavioral shifts.

Two enabling factors are crucial: the ability to navigate institutional constraints by leveraging regulatory spaces for experimentation (such as those provided by Article 36 of Decree Law 2020/76), and the development of inclusive narratives that foster public acceptance of innovations.

Within this perspective fits the model of pooling economies (Foster & Iaione, 2022), which promotes shared ownership and participatory governance to generate collective value. Urban experimentation offers a testing ground for these models, supported by solid theoretical frameworks, data-driven evaluation methodologies, and the capacity to adapt to local specificities.

The Just Sustainable Innovation paradigm is based on the integration of nine essential impact dimensions: technology, civil and social rights, economic development, governance, environment, health, territory, culture/education, and intergenerational equity.

The Theory of Change (Weiss 1995; Reed et al. 2021) provides a causal model for designing and assessing the pathway linking actions to long-term impacts, offering essential tools for setting objectives, engaging stakeholders, and building effective evaluation systems.

The JuSIIA framework (Just Sustainable Innovation Impact Assessment) was developed to offer an advanced, theoretically grounded tool for evaluating the impact of sustainable innovations. Built upon two fundamental conceptual pillars - the Theory of Change (ToC) and the Transformative Social Innovation Theory (TRANSIT) - JuSIIA aims to fill significant gaps identified in existing evaluation practices, particularly regarding territorial dimension and the coherence of adopted indicators. The framework addresses the growing need for evaluation tools that are both methodologically rigorous and capable of adapting to complex, multiscalar contexts where sustainability challenges intersect with issues of social justice, intergenerational equity, and territorial cohesion.

JuSIIA is designed to be used by a diverse range of actors—public administrations, researchers, Third sector organizations, businesses, and local communities—offering a systemic approach to measuring, attributing, and comparing the impact generated by policies, projects, and practices of sustainable innovation.

At the core of the framework lie nine interdependent dimensions, reflecting the complex, layered, and interconnected nature of the transformations required to effectively address the challenges of our time.

The nine evaluation dimensions, inspired by the work of Iaione (2024), include:

- Technology and digital innovation
- Social and civil rights
- Economic development and redistributive impact
- Governance and institutional capacity
- Environmental sustainability and ecosystem balance
- Health and well-being
- Territorial cohesion and spatial inclusion
- Education, culture, and cognitive capacity
- Intergenerational justice

The Just Sustainable Innovation Impact Assessment framework is designed to assess the transformative and systemic impact of sustainable innovations.

Unlike traditional approaches where dimensions are often treated as isolated sectors, JuSIIA adopts an integrated and evaluative logic, in which each dimension serves as an independent analytical lens. This approach allows for examining both intended and unintended impacts and recognizing how these distribute across different social groups, generations, and territories.

Through this flexible yet structured framework, JuSIIA enables not only more accurate and inclusive impact monitoring but also guides policy decisions toward shared goals of just and sustainable innovation.

The JuSIIA framework is designed to assess the transformative and systemic impact of sustainable innovations, while acknowledging that directly measuring such impact can be complex and resource-intensive. Long-term effects often emerge after the project ends and involve multiple external factors. For this reason, JuSIIA allows, when appropriate, impact to be inferred from the outcomes achieved, based on theoretical models, academic studies, or prior evidence. This approach ensures a robust evaluation without compromising operational feasibility.

Measurement is carried out through evaluation rubrics, which assign scores across each of the nine dimensions of the framework. The rubrics do not rely on single indicators but consider four key criteria:

1. Magnitude and scale of impact, meaning the breadth and intensity of the change generated.
2. Sustainability and equity, assessing the duration of benefits and their distribution among different groups, including vulnerable populations.
3. Change from the baseline (T0), to measure actual progress relative to the initial situation.
4. Contribution strength, which estimates how much the intervention has genuinely influenced the observed outcomes.

Through these criteria, JuSIIA enables a comprehensive, contextual, and justice-oriented evaluation, essential for guiding sustainable policies and practices.

Within the JuSIIA framework, the baseline represents an essential initial reference point for objectively assessing the changes generated by an intervention. It defines the existing conditions prior to the start of activities by collecting data related to specific key indicators. The ability to compare achieved outcomes with this starting situation is crucial to assign a concrete value to the observed impact. For instance, in a project aimed at improving access to urban green spaces, the baseline may identify the amount of green space

available per capita before the intervention. In other contexts, such as reducing CO<sub>2</sub> emissions, it allows for the documentation of initial emission levels within a specific area or sector.

The definition of the baseline is primarily based on the use of existing data, such as official statistics, censuses, community surveys, satellite data, or local archives. In the absence of such sources, it is possible to rely on reconstructions based on secondary sources, stakeholder consultations, or comparisons with similar contexts. The strategic value of the baseline lies in its role as a comparative reference: it enables the quantification of observed changes, ensures greater transparency of results, and guarantees consistency and traceability in evaluations conducted through JuSIIA. Furthermore, it serves as a stable anchor point to monitor the evolution of impacts over time.

The nine-dimension impact assessment model is designed as an advanced analytical tool to interpret, in a systemic and integrated way, the effects produced by public policies and multi-stakeholder initiatives at the urban scale. This instrument, the result of a theoretical-methodological development combining evaluative rigor with attention to territorial complexity, is currently being piloted in three Italian cities: Rome, Reggio Emilia, and Castellana Grotte. These contexts differ significantly in demographic size, institutional structure, and social fabric composition, making them particularly meaningful cases to test the framework's adaptability and validity in diverse scenarios.

The aim of this experimentation is not only to measure the technical effectiveness of the tool but also to explore its capacity to influence decision-making processes and urban governance logic. Specifically, the comparative analysis of the three case studies will evaluate if - and to what extent - an impact-centered evaluation approach can help strengthen the role of local communities, stimulate shared responsibility dynamics in the management of common goods, and promote more inclusive and transparent collaborative governance practices.

The fundamental assumption underpinning this approach is that carefully designed evaluation tools, capable of providing a nuanced and multidimensional representation of change, can serve as genuine levers of social transformation. From this perspective, the nine-dimension framework goes beyond merely describing project outcomes; it functions as a strategic guide for public policies, steering them toward goals of greater social justice, environmental sustainability, and collective sharing of responsibilities and benefits. This approach significantly contributes to the creation of an inclusive and dynamic urban ecosystem, where innovation plays the role of a catalyst to promote equity and active citizen participation.

The Just Sustainable Innovation Impact Assessment framework is designed to assess the transformative and systemic impact of sustainable innovations.

Carefully designed evaluation tools, capable of providing a nuanced and multidimensional representation of change, can serve as genuine levers of social transformation.

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Luiss University and LabGov-LABoratory for the GOVERNance  
of the Commons

## Rome

In recent years, the city of Rome has increasingly strengthened collaboration between institutions at different levels, placing particular emphasis on the role of universities and knowledge institutions.

This happened for a number of reasons, starting with the difficult challenges that a metropolitan city like Rome faces and the opportunity to go beyond ordinary management, taking on innovative challenges by pooling resources and knowledge, fully embracing the principles of the City Science Initiative.

This was done with at least two subsequent projects: the House of Emerging Technologies and the Urban Integrated Plan of Santa Maria Della Pietà.

### The House of Emerging Technologies

The House of Emerging Technologies is living lab placed inside Tiburtina station, created by Roma Capitale with co-financing from MISE (Ministry of Economic Development), involving multiple university partners, i.e. La Sapienza University, Tor Vergata University,

Luiss Guido Carli University and Roma Tre University, technical partners like LVenture Group, Innova and Peekaboo, and corporate partners such as TIM, Acea and Wind-Tre.

The concept behind the project is to drive the sustainable development of the Capital City through emerging technologies such as blockchain, the Internet of Things, Artificial Intelligence and integration with 5G networks. More in detail, the House of Emerging Technologies aims to support startups in the fields of mobility and services

for citizens and tourists through two interconnected paths: business acceleration, helping them to reach the market with innovative solutions and to meet the needs of the population, and technology transfer, ensuring the creation of a secure environment where the businesses, thanks to mutual trust, can share know-how, experience and resources.

### The Urban Integrated Plan of Santa Maria Della Pietà

The Urban Integrated Plan, as a part of the National Recovery and Resilience Plan dedicated to cities, aims to redevelop relevant components of urban frameworks with a view to service integration, inclusion, and urban regeneration. In Rome, the former psychiatric hospital of Santa Maria della Pietà has been identified to carry out the Plan, with the pavilions that housed patients to be converted into new spaces for collaboration and capacity building.

The Santa Maria della Pietà Integrated Plan aims to create a real Health and Wellbeing Park, where an articulated system of spaces and activities brings to personal development, improving social and work skills, promoting healthy lifestyles and enhancing mental and physical well-being.

Although the implementing entity for the Integrated Urban Plan is Roma Capitale, the regeneration project is being carried out in

agreement with a number of strategic players, including the Lazio Region, the Municipality of Rome and its branches, the local health authority, and academic actors such as LUISS and LabGov ETS, which are currently working on the governance of the Santa Maria della Pietà complex to develop a place people's needs are carried out by citizens, NGOs and local stakeholders, public institutions and universities.

The "Guidelines" of the Integrated Urban Plans of the Metropolitan City of Rome Capital, approved by the Metropolitan Council on 28 February 2022, provide that a Metropolitan City Science Office could be established to support for coordination, monitoring and reporting on impacts achieved, with an organisational structure explicitly inspired by already existing City Science Offices.

### City Science Office

Rome, in summary, despite the Guidelines of the Integrated Urban Plans, has not yet developed a City Science Office as an institutionalised research and innovation office, regulating it in a specific Municipal Regulation, as was done, for example, by the city of Reggio Emilia.

Nevertheless, given the complexity of a metropolitan city such as Rome and the scale of the challenges it currently faces,

significant steps have already been taken in this direction. The partnership behind the House of Emerging Technologies and the Santa Maria della Pietà Integrated Urban Plan, involving various knowledge institutions, are two examples of this new approach.

In both cases, although the aim is limited to a specific project or area of interest, such as emerging technologies, collaboration between the city – public bodies, but also citizens and private stakeholders – and academia is institutionalised with a view to transforming the city into a people-centred smart city.





**Amsterdam Barcelona Bergamo Berlin Brno Brussels Cluj-Napoca  
Copenhagen Cork Dubrovnik Duisburg Essen Espoo Gent  
Glasgow Greenwich Groningen Hamburg Helsinki Leuven  
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