LEGAL DESIGN JOURNAL

Volume 2 Issue 1 2025

Public Futures: Data, Rights, Design

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Abstract

The progressive consolidation of legal design as an approach aimed at making law more accessible and comprehensible highlights the need to train designers capable of applying design tools consciously and appropriately to the specificities of regulatory contexts and, more broadly, the public sector. The integration of visual communication design methodologies with the requirements of public institutions paves the way for the introduction of innovative practices into governance processes, going beyond the mere application of design thinking. This paper explores the role of speculative design as an approach capable of supporting legal and institutional innovation in the public sector, with particular attention to its methodological and educational implications. Through a teaching experiment conducted in collaboration with central Italian administrations, the research examines how narrative and visual practices can be integrated into anticipatory governance processes. From this perspective, speculative design, in its narrative dimension, functions as an exploratory and anticipatory tool, capable of prefiguring potential outcomes, criticalities, and interdependencies arising from policy decisions. The study proposes a replicable methodological model for training public-sector designers and for integrating speculative narratives into decision-making processes, offering a contribution to the reflection on innovation practices in the public sector.

Keywords: Speculative design, Visual storytelling, Communication design for Public sector, Public Designer education

Introduction

This paper aims to explore the potential of speculative design as a methodological and operational tool to support legal and institutional innovation processes within the public sector. Specifically, it examines how narrative and visual design practices - particularly visual and data storytelling - can be strategically integrated into anticipatory governance to foster new forms of reflection, participation, and decision-making. The research builds upon an educational and experimental path developed over several years in collaboration with various central Italian administrations, which employed speculative narratives to produce communicative artefacts intended to stimulate critical debate and institutional imagination.

The study frames speculative design as a systemic and integrable component within governance processes, capable of informing political and institutional decision-making. It grounds this theoretical perspective in a design-driven educational experiment focused on the

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future of fundamental rights - an area where speculative design and legal design remain largely underexplored. The paper proposes a replicable methodological model for training public designers and for integrating speculative narratives into institutional practices. Positioned at the intersection of three domains - futures studies, speculative design, and public communication - this study investigates how speculative and visual approaches can expand the methodological repertoire available to public administrations, embedding critical imagination within institutional processes.

Futures studies have long maintained a close relationship with the public sector. Indeed, it can be argued that this meta-discipline - devoted to the exploration of multiple possible futures - emerged primarily in response to the needs of military and governmental bodies to develop forecasting tools capable of addressing the increasing complexity of international contexts marked by uncertainty. This condition of uncertainty found its fullest expression, beginning with the Cold War era (Gidley, 2017; Motti, 2019; Paura, 2022), in what has been termed the VUCA condition - an acronym encompassing Volatility, Uncertainty, Complexity, and Ambiguity, which together characterise the dynamics of the contemporary global landscape.

Today, futures studies represent a well-established field, firmly rooted in the social sciences and strategic research. The discipline draws upon both quantitative and qualitative methods to analyse weak signals and emerging trends, with the aim of constructing plausible scenarios capable of informing strategic decisions and supporting long-term planning by public administrations and institutions. The approach is typically systemic in nature, seeking to reduce uncertainty by developing predictive models that assist policymakers and institutions in formulating resilient strategies. Applications of futures studies unfold along three principal axes - forecasting, foresight, and anticipation - each aimed at narrowing the gap between the present and potential futures, offering interpretative frameworks and actionable tools for public decision-makers (Poli, 2019, p. 11).

Futures studies and speculative design share a common ground in the exploration of possible futures, yet they approach this task with distinct purposes and methodologies. While the former relies on analytical and scenario-based approaches, speculative design operates through the critical materialisation of alternative visions, creating a symbolic and cultural space for reflection rather than one focused on prediction. Speculative design situates itself within an exploratory and critical dimension, markedly distant from the conventional logic of design as a problem-solving practice aimed at immediate needs. Rather than attempting to forecast the future through data-driven models and trend analysis, it constructs imaginary scenarios that serve as tools for reflection and debate, challenging the ethical, social, and political implications of present-day technological and administrative choices. This is not the design of market-oriented products, but rather an exercise that interrogates the deeper structures of society and the mechanisms that govern its evolution.

This divergence in approach is aptly articulated by Anthony Dunne and Fiona Raby, who emphasise that speculative design does not stem from production or consumption needs, but rather from the complex interplay of laws, social beliefs, values, fears, hopes, and political systems that shape our relationship with the future - elements that can be critically examined and deconstructed through design (2013, p. 70). The primary objective is not the likelihood of a given scenario becoming real, but its capacity to generate questions and reactions, prompting a rethinking of the status quo. Within this framework, speculative design is often referred to as *critical design* (Dunne, 1999; Malpass, 2017) or *discursive design* (Tharp & Tharp, 2019), underscoring its role in initiating critical dialogue. The artefacts produced within this context are not merely designed objects, but ‘thought objects’ - narrative and material tools intended to

provoke reactions, raise questions, and inspire new interpretations of reality. At times, they explicitly assume a provocative function, as captured by the term *provotype* (Boer & Donovan, 2012), coined to describe artefacts that do not merely represent possible futures, but actively challenge them, stimulating confrontation with the change they imply.

One of the practices associated with speculative design is *design fiction*, which involves the construction of future scenarios through the design of specific artefacts - or, in the words of writer Bruce Sterling, represents 'the deliberate use of diegetic prototypes to suspend disbelief about change' (2013). In this case, design takes the form of a materialised narrative, a device capable of constructing hypothetical scenarios while simultaneously encouraging active reflection on the ethical, social, and political ramifications of design choices. The focus thus shifts away from design itself and towards the citizen, confronted with the changes and opportunities that design is capable of revealing. This dimension of engagement becomes essential when framing speculative design for the public sector within an ethical and, necessarily, empathetic framework. These two fundamental characteristics of speculative design - ethics and empathy - enable the development of a critical discourse that moves beyond the realm of science-fiction storytelling or techno-enthusiastic marketing (Jensen & Vistisen, 2017).

This capacity to provoke critical reflection on the present is one of the key reasons for the relative success of speculative design, as evidenced by the numerous exhibitions it has inspired over the years in some of the world's leading cultural institutions. Notable examples include *Design and the Elastic Mind* (Aldersey-Williams et al., 2008) and *Talk to Me* (Antonelli, 2011), both curated by Paola Antonelli at the Museum of Modern Art (MoMA) in New York; *Studio Time: Future Thinking in Art and Design* (Boelen et al., 2018) at Z33 in Hasselt, Belgium; *Broken Nature* (Antonelli & Tannir, 2019), curated once again by Antonelli at the Triennale di Milano; and *Designs for Different Futures* (Hiesinger et al., 2019), exhibited at the Philadelphia Museum of Art and the Walker Art Center in Chicago. Meanwhile, the Museum of the Future in Dubai—dedicated to envisioning the innovations shaping life in the year 2071 - periodically hosts temporary installations exploring design fiction, among which we may highlight *Future Government Services*, curated by Tellart,[1] and *The Vault of Life*, curated by Superflux.[2]

Sustainable futures

Beyond its critical function, speculative design can also be understood as a strategic device capable of guiding individuals, organisations, and institutions through transitions toward more sustainable and equitable futures. This approach does not merely imagine alternative scenarios but calls for a radical rethinking of existing economic, social, and legal structures, often challenging their very foundations. Compelling examples of this perspective are found in the research of designer Matthew Wizinsky, who in his *Design after Capitalism* (2022) offers a critical examination of design's role in a post-capitalist society, questioning how the discipline might contribute to redefining models of value production and distribution within an alternative economic system. Another significant exploration is offered by sociologist Peter Frase, who in *Four Futures* (2016) examines the transformative trajectories of capitalism through four hypothetical future scenarios, each characterised by distinct configurations of social and technological dynamics. Employing a speculative lens, Frase analyses the implications of post-capitalist models of society, sketching out scenarios that range from utopia to dystopia, with

[1] https://www.tellart.com/projects/future-government-services/
[2] https://superflux.in/index.php/work/the-vault-of-life-in-museum-of-the-future/#

the aim of fostering critical reflection on the political and systemic decisions shaping our present.

Within this framework of a radical rethinking of social and legal structures - which, as we have seen, constitutes one of the privileged horizons of speculative design - lies the proposal of philosopher Luciano Floridi, who has consistently paid close attention to the role of design as a cultural and political practice. Floridi suggests redefining in terms of ethical sustainability the very notion of the 'social contract', that is, as the foundational pact which, in the contractualist tradition, binds rulers and ruled in a mutual commitment. According to Floridi, this implies a shift from a perspective centred on the primacy of individuals, objects, and obligations toward one that recognizes the priority of relationships and fiduciary bonds. In this direction, he advances the proposal to reinterpret the social contract through the legal form of the Universal Trust*:* an institution in which the currently living generation assumes the role of trustee of the 'world' - understood as *res publica* - as it has been handed down by the settlor, the past generations, with the duty to preserve and enhance it for the ultimate beneficiaries, the generations to come (Floridi, 2020). This proposal constitutes a particularly fertile juridical-philosophical premise from which to initiate speculative design projects.

A crucial aspect that speculative design shares with the approaches outlined above is the recognition of the narrative's power to shape public perception and influence political and institutional discourse. The effectiveness of literature and cinema in moulding the collective imagination around governmental policies and models of governance has been widely investigated, revealing how the representation of future scenarios can guide either consensus or dissent in relation to ongoing social transformations (McCurdy, 1995). This capacity of speculative design to interweave design and critique also manifests in its engagement with political imagination. As Tomás Maldonado argued, politically transformative dissent and a 'design-oriented hope' represent the only meaningful antidotes to passive consensus (1970, p. 60).

In this sense, speculative design does not merely contest the status quo; rather, it constitutes a constructive act, capable of envisioning viable alternatives and providing tools to imagine more sustainable and equitable futures. Design, after all, has always stood out as a process of *world-making* - an intentional and conscious activity of shaping the world through the design of objects, systems, and symbolic artefacts that define our everyday experience. Its power does not lie solely in solving functional problems, but in its ability to give form to new possibilities and meanings. Design possesses the extraordinary capacity to 'imagine that-which-does-not-yet-exist, in order to make it appear concretely as a new and intentional addition to the real world' (Nelson & Stolterman, 2012, p. 12). Such a perspective departs from the traditional view of design as a mere problem-solving activity and opens the way toward a design practice oriented to the construction of the social meaning of products and services. Within this framework, the designer assumes an increasingly central role as a *sense-maker* - a constructor of meaning - capable of shaping the narrative and symbolic structures that underpin our lived reality (Manzini, 2015, p. 35).

Rethinking the role of the designer is, moreover, an essential step when considering how design practices themselves have contributed to the emergence of the current model of unsustainable development. As highlighted by Tony Fry in his concept of *defuturing* (2020), design can no longer evade the responsibility of recognising its own complicity in the creation of unsustainable futures. It must radically rethink its role in relation to the construction of the future. *Defuturing*, in this regard, becomes a necessary condition for a new way of designing and engaging with the world.

This critical dimension - aimed at questioning dominant dynamics and constructing alternative visions—has found increasing resonance within the field of futures studies. It is no coincidence that, in recent years, both futures studies and speculative design have placed strong emphasis on the notion of 'occupying the future': a call to reclaim the space of possibility from the hegemony of dominant forces that constrain it to a narrow set of predetermined, unchallengeable trajectories (Paura, 2022). The future - technological, economic, social - has long been presented to us as the inevitable endpoint of contemporary society, a deterministic mechanism we may now recognise as a form of *futurewashing* (Mereu & Preira, 2024). As Ezio Manzini has recently observed, this vision of the future increasingly takes on the unsettling features of a concoction blending Bible with Mars colonisation - an imaginary elevated by the alt-right as a new American dream (2025).

It is worth recalling here that one of the foundational principles of both futures studies and speculative design is their commitment to the multiplicity of possible futures. In Joseph Voros's thinking, this openness to future pluralism is articulated through his three 'laws,' which underscore the unpredictability and indeterminacy of the future and emphasise how every present action influences the range of future alternatives (2001). The first law asserts that the future is not predetermined;[3] in other words, there is not - and cannot be - only one future, but rather an infinite array of potential alternative futures. The second law states that the future is not predictable, and even if we were to attempt prediction, we could never possess sufficient information, nor a level of precision capable of accounting for every infinitesimal variable at play.[4] The third law reminds us that the choices we make in the present will determine the direction of future outcomes. In other words, today's actions - or inactions - always produce consequences.

This perspective reinforces the idea that the future is neither a neutral space nor a predestined endpoint, but rather a site of symbolic and political struggle - one in which design and speculative practices can play a strategic role in opening up unforeseen scenarios and constructing alternative narratives, including within the public sector. The challenges that lie ahead - from climate change to the transformation of labour dynamics, from digital rights to the governance of emerging technologies - require not only innovative solutions but a radical shift in perspective that engages both past and future. The rapid development of digital technologies and their societal impact is inverting traditional generational dynamics of expertise: increasingly, it will be the younger generations who understand and explain technology to their elders. The lessons of the past are no longer sufficient; in this new context, 'learning from the future' becomes an essential complement to the study of history.

Speculative design for public sector

Despite its transformative potential - or perhaps precisely because of it - the integration of speculative design into the public sector faces numerous obstacles. This difficult integration can be attributed, in part, to the very nature of speculative design, which is characterised by a strong provocative charge - at times implicit in its narrative structure,[5] and at other times

[3] Just as even the physical processes that govern the universe cannot be predetermined, in accordance with Heisenberg's Uncertainty Principle.

[4] An assertion closely related to the mathematical and physical concept of the "butterfly effect" and Chaos Theory.

[5] Consider, for instance, the NYC Office of Public Imagination project developed at the Parsons School of Design (https://www.facebook.com/NYCImagination), or the artistic-political initiative Empatia Ele by Enni-Kukka Tuomala (Hiesinger et al., 2019, p. 62; https://ennikukka.com/empatia-ele).

explicitly deployed to provoke constructive tensions within participatory processes (Boer & Donovan, 2012).

Such tensions can themselves become sources of friction, generating resistance and, in some cases, outright rejection within public administrations. As previously discussed, speculative design operates through an exploratory and provocative logic that often clashes with the prevailing culture of public administration, which is traditionally oriented toward regulatory compliance, risk minimisation, and the efficient management of immediate problems. Indeed, it is not uncommon for speculative design to be met with scepticism within public institutions, perceived as an abstract exercise or an intellectual pursuit with limited potential for tangible, measurable outcomes. The administrative culture, long focused on normative fulfilment and short-term predictability, tends to favour prescriptive tools and immediate solutions, struggling to accommodate design practices that require long timeframes, iterative processes, and a continuous negotiation between imagination and reality (Bason, 2018, pp. 17-19).

Tools such as the creation of *provotypes* or the use of speculative narratives may be perceived by public decision-makers as abstract practices, lacking in immediate applicability and difficult to justify in terms of transparency and accountability. This is further compounded by the rigidity of the legal and procedural frameworks that govern the public sector, which often discourage the adoption of unconventional approaches. Such cultural distance translates into a form of structural resistance—one that concerns not only the acceptance of speculative methodologies, but also the recognition of the value of open-ended questions, dissent, and uncertainty as foundational components of a more reflective and deliberate decision-making process.

In the context of Italian public administration, procedural rigidity, the imperative of transparency, and the pressure for accountability often discourage investment in practices that do not produce measurable results or outcomes readily translatable into Key Performance Indicators (KPIs)[6]. To this structural limitation one must add, in most cases, the absence of professionals with specific design expertise within decision-making bodies, thereby restricting the capacity to integrate design thinking - and even more so speculative design - into policymaking processes.

Despite these challenges, recent years have witnessed a growing interest among governments and organisations in adopting anticipatory and speculative approaches, not so much as predictive tools, but as forms of shared imagination capable of guiding more inclusive, sustainable, and resilient public policies. Since 2012, UNESCO has promoted the establishment of the *Global Futures Literacy Network*,[7] a network that currently involves eleven countries with the aim of developing practical tools to apply speculative design to the initiatives of governments, businesses, and communities (Miller, 2018). In parallel, the *Organisation for Economic Co-operation and Development* (OECD) has devoted considerable attention to the experimentation of speculative methodologies to support administrations in anticipating risks and opportunities, particularly in the context of institutional reforms and public service innovation pathways (OECD, 2019, pp. 105–118).

At the European level, notable experiences have also emerged: Finland, for instance, has had a *Committee for the Future*[8] since 1993; in the United Kingdom, the *All-Party Parliamentary Group*

[6] In accordance with Legislative Decree No. 150 of 27 October 2009, concerning the “Performance Plan”.
[7] https://en.unesco.org/themes/futures-literacy
[8] https://www.eduskunta.fi/EN/valiokunnat/tulevaisuusvaliokunta/pages/default.aspx

on Future Generations[9] has been active since 2017 to promote long-term thinking. The *EU Policy Lab* of the European Commission has likewise integrated speculative design approaches into its project *The Future of Government 2030+*, experimenting with citizen co-creation and design fiction processes as tools for exploring alternative governance scenarios and for envisioning, through the construction of shared narratives, the most desirable institutional and social transformations (Vesnic-Alujevic et al., 2019).

In the domain of service design, the *Danish Design Center* has promoted various projects to explore the future trajectories of the national healthcare system through speculative methods (Østergaard et al., 2023), while the *Imagination Lab* at Lancaster University has conducted design fiction workshops with elderly residents in care homes to explore innovative responses to the societal challenge of population ageing (Darby et al., 2015).

Within this international landscape, the United Kingdom also stands out for the activity of its *Policy Lab*, an advisory body within the Cabinet Office dedicated to innovation in public policy, which has repeatedly emphasised the creative potential of speculative design (Drew, 2015). Finally, the innovation foundation *Nesta* has underlined the importance for governments of engaging with the future over a minimum horizon of fifteen years, advocating for the adoption of speculative practices as a necessary complement to more traditional policy design methodologies (Kolehmainen, 2016).

Even in Italy - albeit with a structural delay compared to the Northern European contexts - early signs of interest in the integration of speculative design into governance practices are beginning to emerge. The Department for Digital Transformation,[10] for instance, has initiated exploratory pathways aimed at employing speculative scenarios to foster innovation in digital public services. In a broader context, certain recent publications - such as the anthologies *Oltre i confini della realtà. La fantascienza e gli universi distopici della Giustizia* [*Beyond the Twilight Zone. Science fiction and the dystopian universes of Justice*] (Cattaneo et al., 2023) and *PAntascienza. 15 racconti sulla pubblica amministrazione del futuro* [*PA science fiction. 15 short stories about the public administration of the future*] (Grasso, 2024) - have offered narrative translations of speculative approaches set within the realms of justice and public administration, drawing upon a long-standing literary and cinematic tradition.[11]

Within the broader domain of policy design, anticipatory methodologies have now gained a degree of institutional consolidation, as demonstrated by the extensive contributions collected in the special issue of *Policy Design and Practice* devoted to *Designing Government Futures* (Kimbell & Vesnić-Alujević, 2020). Speculative design is also gaining traction in the emerging field of legal design, offering innovative approaches to address regulatory challenges in rapidly evolving social, technological, and legal landscapes (Ducato et al., 2024a; Ducato et al., 2024b; MacLoud, 2024; Pasa & Sinni, 2024). Despite their diversity, these experiences converge in recognising a crucial role for speculative design - not as a means of forecasting, but as a method for training collective imagination to recognise, debate, and choose among alternative

[9] https://www.appgfuturegenerations.com/

[10] https://medium.com/designers-italia/citizens-of-the-future-the-future-of-citizens-undici-progetti-raccontano-i-servizi-pubblici-di-77055653bf28

[11] Science fiction has long depicted bureaucratic systems and public administrations, often exposing their virtues—or more frequently, their flaws (Holley & Lutte, 2017). From the obsessive and opaque bureaucracy of *1984* (1984) and *Brazil* (1985), to the racialised alien census of *District 9* (2009), the robotic helpdesk in *Elysium* (2013), and the paradoxical healthcare service in *Altered Carbon* (2018), the genre has offered a predominantly dystopian view of public institutions (Lee, 2017; Sauvé, 1998).

futures, thereby strengthening the role of citizenship in shaping more equitable, sustainable, and inclusive futures.

The training of the *public designer*

In this context, while the lessons of history remain necessary, they are increasingly insufficient. As previously discussed, it becomes vital to complement the study of the past with a future-oriented form of learning—one capable of identifying 'weak signals' in the present and transforming them into anticipatory knowledge. Consider, for instance, the many signs accumulating today around the fragility of human rights as we currently understand them.

History teaches us how long and arduous the struggle to secure fundamental rights has been—yet there is no guarantee these rights will continue to be recognised or protected in the futures to come. The uncertainty characterising today's transformations prompts an urgent question: should we not begin 'learning from futures' by exploring scenarios in which our current rights might evolve, be challenged, redefined, or even replaced? Which of today's supposedly universal rights might cease to be recognised as such? Which might be reinterpreted? And what new rights could emerge in response to radically altered social, environmental, and technological conditions?

To activate a systematic reflection on such questions is not only to acknowledge the historical contingency of rights, but also to recognise the speculative and transformative potential of anticipatory thinking in shaping public policies and design cultures. From this perspective, learning from the future is not a matter of futurology, but rather a practice of epistemic and political responsibility - one that is indispensable for guiding today's decisions toward the desirable horizon of greater social, environmental, and technological justice.

Over the past few years, a significant part of the teaching activities I have conducted within the design courses at Università Iuav di Venezia has been developed in collaboration with central administrations and public bodies - including the Department for Digital Transformation of the Presidency of the Council of Ministers, the Designers Italia platform, the inter-university consortium Cineca, and the Ministry of Infrastructure. These collaborations have offered the opportunity to define the specific skills and competencies required for the training of a *public designer*: a professional specialised in addressing projects developed within the public sector. Across the various courses, several research themes have been directed towards speculative practice, understood as a design approach capable of fostering critical reflection on the futures of digital rights, public services, and social innovation.

Within this framework is situated the recent research conducted in the workshop *Public Futures. Data, Rights, Design*,[12] dedicated to the futures of fundamental rights. Beginning with the analysis of emerging signals related to rights, the research explored a range of themes - workers' rights in the digital economy, democratic backsliding, the sustainability of the right to mobility, the right to information in the age of post-truth, and the juridical status of natural ecosystems, to name but a few. These issues were investigated by students through a generational foresight perspective, projecting scenarios from the present to 2050. The final

[12] Led in collaboration with Irene Sgarro and Giovanni Foppiani and with the legal expertise provided by Barbara Pasa.

Fig. 1. *Public Futures Zine 2050*. Master's Degree Programme in Design. Communication Design Course. Università Iuav di Venezia, 2024/25.

output - *Public Futures Zine*, [Fig. 1] a series of twelve visual publications, each dedicated to a different fundamental right - stands as a concrete example of how speculative design can intersect with data visualisation and visual storytelling to give shape to scenarios capable of stimulating informed, democratic debate on the challenges facing contemporary society.

Tools for a speculative method

The introduction of speculative design into governance practices - both in the anticipatory phase of scenario construction and in the subsequent stage of concretisation through diegetic prototypes - necessarily requires the availability of a robust 'toolbox'. This is not simply a matter of possessing operational instruments that give form to the process, but rather of constructing a methodological framework capable of sustaining, nurturing, and accompanying critical imagination throughout its entire arc - from initial reflection to final representation. Such a toolbox should not merely assist the designer in formalising artefacts but should actively stimulate their engagement in the exploration of alternative - and where possible, transformative - visions.

Supporting this process is a growing body of methodological contributions, consolidated in recent years through manuals and toolkits devoted to futures-oriented design. Among these,

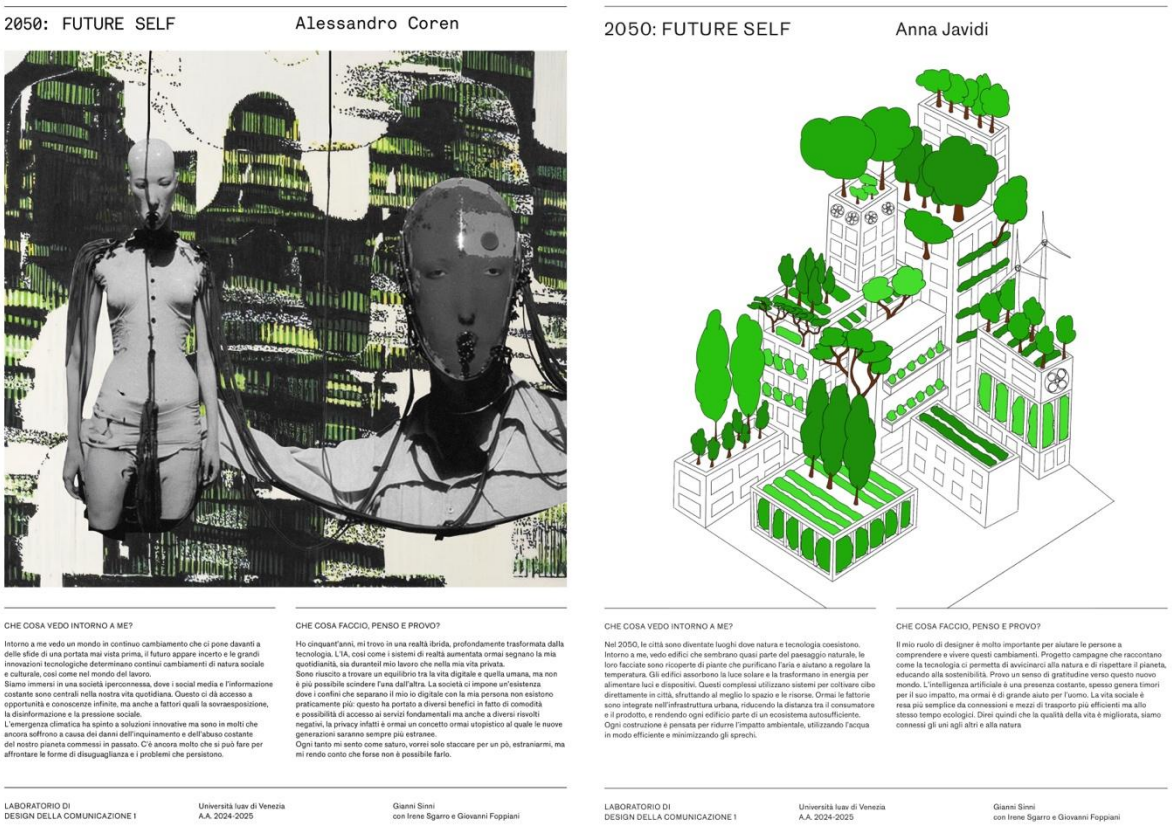

Fig. 2. *Future Self.* Authors: Alessandro Coren, Anna Javidi. Università Iuav di Venezia, 2024/25.

two publications stand out for their clarity and scope: the *Manual of Design Fiction* (Bleecker et al., 2022), produced by the Near Future Laboratory, and the *Future Design Toolkit* (Harb & Celi, 2023), developed within the framework of the European inter-university project *Future Education and Literacy for Designers*.[13] Complementing these, particularly in the domain of public policy, is the selection of toolkits curated by the OECD's Observatory of Public Sector Innovation[14] —a veritable resource for those seeking to embed anticipatory practices within institutional and policy-making processes, thereby enhancing the public administration's capacity to think and design with greater future awareness.

Within the context of university courses conducted (Sinni, 2018; 2021), these toolkits have been progressively tested, calibrated, and reinterpreted according to both the project goals and the composition of the working groups. This iterative experimentation has allowed for the emergence of a recurrent methodological structure articulated in three main phases: framing, documentation, and narrative visualisation. Although these phases follow distinct logics, their interrelation forms a cohesive framework that supports the development of a shared, critical, and problematised image of the future.

[13] http://www.fuel4design.org/

[14] https://oecd-opsi.org/toolkits/?_toolkit_discipline_or_practice=futures-and-foresight&_sft_good-for=scanning

1. Polak game

The starting point of the first phase of framing - crucial for triggering critical reflection on possible futures - is the *Polak Game*. This tool enables participants to explore the relationship between individual imagination and collective perception of the future by positioning themselves consciously along two key axes: the perceived direction of historical change (optimistic: the world is improving / pessimistic: the world is deteriorating) and the degree of agency attributed to individuals (active: individuals can influence change / passive: historical processes determine events). Inspired by the work of Dutch sociologist Fred Polak - who, as early as the 1950s, underscored in *The Image of the Future* (1973) the centrality of future visions in shaping collective action - this exercise reveals, in a simple yet effective manner, the cognitive and political postures that condition one's capacity to imagine alternatives.

The value of the *Polak Game* lies both in its function as an 'ice-breaker' and in its ability to foster explicit dialogue on differences in perspective and vision within a working group. It is, in other words, a tool for projective self-awareness and political consciousness (Hayward & Candy, 2020). Through scenario simulation, participants are encouraged to reflect on their own expectations and how these influence current decision-making. In the context of the public sector, the *Polak Game* facilitates the exploration of diverse attitudes among policymakers and citizens toward transformation and change, helping to identify potential cognitive barriers that hinder the adoption of innovative strategies.

2. Future self

The combined use of narrative and reflective tools also characterizes the *Future Self*, a method that shifts the focus from the collective to the personal level, asking participants to imagine their own lives projected into a future scenario.[15] This technique allows one to move beyond a purely speculative dimension by anchoring the construction of scenarios to a concrete (auto)biographical level - one capable of making the future emotionally tangible and experientially relevant.[16] [Fig. 2] Precisely this personal dimension helps mitigate the risk of abstract drift and encourages an ethical, accountable reflection on present-day decisions. Through the writing of letters to one's future self or the drafting of future life diaries, both citizens and public administrators can develop greater awareness of the long-term impact of their current choices on future generations, fostering more responsible and inclusive design practices.

3. Horizon scanning

While the first phase is oriented toward reflection and awareness, the second methodological phase, focused on documentation, aims to consolidate design hypotheses through the collection, analysis, and interpretation of data and 'weak signals' (Hiltunen, 2008). 'The future is already here - it's just not very evenly distributed' is the well-known assertion by writer William Gibson, which urges us to seek out and recognise within the present the signs of changes already underway, the emerging trends, and the drivers of transformation likely to influence the socio-political landscape in the years to come.

[15] See, in this regard, the *Fut-Lab* experiments described in Poli, 2019, pp. 129–137.
[16] During the workshop *Public Futures*, it was planned to send a Digital Time Capsule on February 13, 2050 to all participants allowing the future self to be reminded of thoughts of the present self.

Based on the analysis of data drawn from diverse sources - from scientific publications to grassroots movements, from technological trends to demographic shifts - *Horizon Scanning* (European Commission, 2015) is one of the most widespread and established tools. It enables the mapping of emerging trends, latent shifts, and early signals of change with the aim of anticipating, as far as possible, future transformations. Through a systemic and cross-sectoral approach, Horizon Scanning compels one to widen their perspective and to question the direction of change, avoiding the temptation to merely confirm familiar or culturally reassuring scenarios. The value of Horizon Scanning lies in its ability to challenge entrenched assumptions and to stimulate a more proactive stance in public policy planning.

4. Backcasting

If Horizon Scanning helps us understand 'where we are heading' - and what scenarios may arise if current trends persist uninterrupted - *Backcasting*, by contrast, offers a complementary approach capable of overturning the linear logic of forecasting. In *Backcasting*, the starting point is not the present but a desired or feared future; from this imagined destination, one reconstructs – retrospectively - the chain of decisions and transformations needed to reach (or avoid) it **[Fig. 3]**. If, for example, we hypothesise the future establishment of a totalitarian theocracy in the United States, the *Backcasting* method enables us to retroactively identify the legislative, political, and social steps that would enable such a scenario to come to pass (a scenario, incidentally, that constitutes the narrative of *The Handmaid's Tale* by Margaret Atwood (1985): any resemblance to real people or events being purely coincidental).

In the public sector, *Backcasting* proves particularly valuable for planning sustainable urban policies, designing more inclusive welfare systems, or developing strategies for adapting to climate change. Its strength lies in its ability to translate ambitious visions into concrete actions, turning the future into an active design horizon rather than an inevitable outcome.

5. Futures wheel

In continuity with this logic, the *Futures Wheel*, developed by futurist Jerome Glenn (2009), provides a visual structure that enables the systemic and non-linear exploration of the direct and indirect consequences of an innovation, a political decision, or a social change. The logic behind this method is that of ripple propagation: starting from an initial *what if* - a hypothesis, a change, a decision - concentric circles of effects are generated, progressively expanding and involving sectors and domains that would appear disconnected or marginal in a linear analysis (Ducato et al., 2024b). The objective is not to forecast specific outcomes, but rather to activate a holistic vision capable of capturing the ecosystem of consequences and the interdependencies linking various spheres of society and the environment.

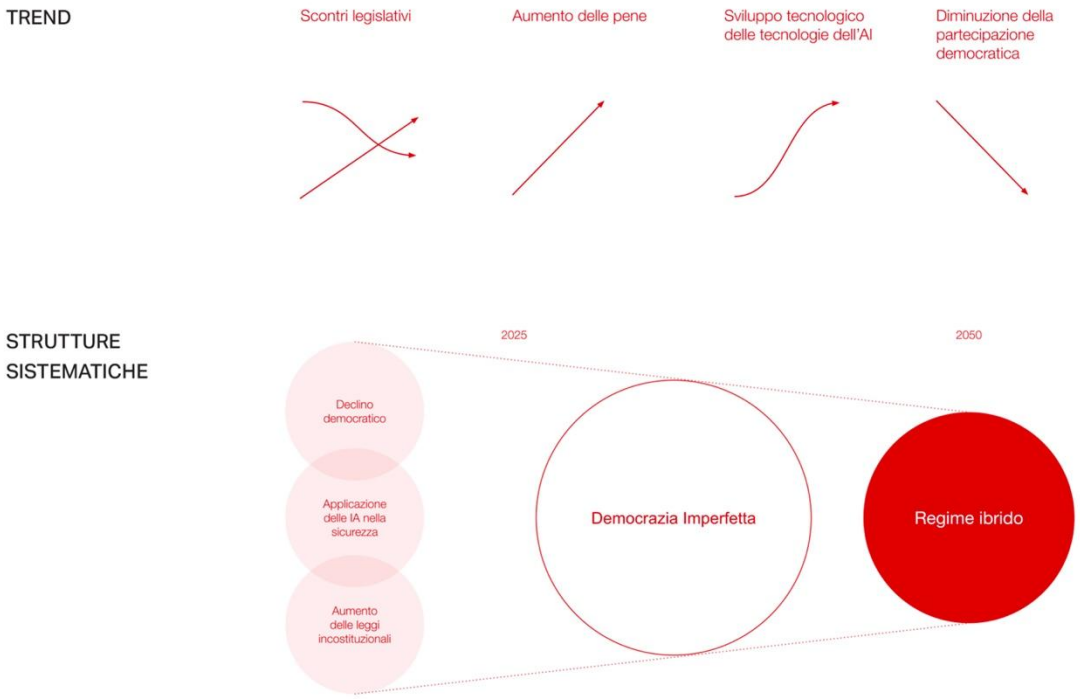

Fig. 3. Backcasting for *The Italian hybrid regime*. Authors: Edoardo Birilli, Roberto Cannarile, Matteo Lentini, Celine Roberti. Università Iuav di Venezia, 2024/25.

A paradigmatic example of the *Futures Wheel*'s application can be found in the large-scale introduction of self-driving vehicles (*what if*): a technological innovation that, while potentially reducing road accidents - and thereby representing an improvement in terms of public safety - could simultaneously generate less obvious consequences, such as a significant reduction in the availability of organs for transplantation, which often come from road accident victims. This simple example highlights how every transformation - even when aimed at improvement - can produce unexpected and interconnected effects, and how it is essential to adopt tools that can reveal such complexities.

In the public sector, the *Futures Wheel* proves particularly useful for assessing the implications of new regulations, institutional reforms, or technological implementations, helping to identify potential side effects and to strengthen the adaptability of public policies.

6. Futures cone

Concluding this sequence of tools is the *Futures Cone* (also known as the Voros Cone, named after its author) (Voros, 2001; 2015; 2017), one of the most well-known representations for visualizing the complexity and multiplicity of possible futures. The Cone draws its name from the metaphor of a cone of light illuminating a dark space, conveying the idea of a future that expands outward, distinguishing between *Projected, Probable, Plausible, Possible, Preferable,* and finally *Preposterous* futures (PPPPPP).

The *Projected Future* is the one we expect - projected through extrapolation as the continuation of the past into the present - based on a fundamentally deterministic vision[17] that does not question the current state of affairs. *Probable Futures* are those we believe are likely to happen, based on current trends. *Plausible Futures* are those we think could happen based on our current knowledge (physical laws, social and economic processes, etc.). *Possible Futures* are those we think could happen, based on knowledge we do not yet possess, but might acquire in the future. At the edge of the cone of light lie the *Preposterous Futures* - the ones we consider 'impossible' or 'that will never happen.' As in Overton's Window,[18] the relationship between these types of futures is constantly evolving in a fundamentally dialectical process. In this perspective, the seemingly bizarre category of Preposterous Futures becomes a powerful creative stimulus - reminding us, as Jim Dator suggests, that 'any useful idea about the future should appear ridiculous' (Voros, 2015); otherwise, it is not novel or original enough. Transversal to the categories described above is the more subjective and ambiguous category of Preferable Futures - those we would like to see happen, but for which no universal consensus exists: what I consider preferable does not necessarily coincide with what others do. As such, the pursuit of preferable futures always involves negotiation. In a public policy context, however, preferable futures can be associated with non-zero-sum game (win-win) that benefit multiple stakeholders.

To further reflect the complexity of reality, the *Futures Cone* also includes *wildcards* - unpredictable events with low probability but high impact,[19] such as the COVID-19 pandemic, which significantly altered global trajectories. In public sector contexts, the *Futures Cone* allows for the elaboration of flexible and adaptive strategies by acknowledging that the future is not a single deterministic path but rather a set of evolving possibilities shaped by change.

7. Artificial data

To complement this overview of tools and practices for applying speculative design to the public sector, it is necessary to highlight an emerging resource that, though still in its early stages of institutional adoption, represents one of the most promising developments in anticipatory practices: *Artificial Data*.

These are synthetic data generated by artificial intelligence algorithms - particularly generative AI systems - which replicate the statistical features of real datasets without corresponding to any actual individual or real-world phenomenon. This makes them particularly valuable in sensitive domains - such as health, finance, or personal data - where privacy regulations and data protection laws impose strict limits on data sharing and manipulation.

The use of *Artificial Data* thus significantly expands the exploratory potential of speculative design labs, enabling the creation of hypothetical scenarios, the testing of predictive models, the simulation of policy impacts, or the evaluation of complex system resilience - without waiting for such conditions to occur in the real world. However, it is important to emphasize that artificial data generated by non-specialized systems - such as general-purpose generative models, including ChatGPT - tend to produce linear and coherent narratives that reflect dominant patterns in their training data. For this reason, it is often necessary to steer their generation by introducing disruptive elements - the wildcards mentioned earlier - that can break narrative linearity and prompt the emergence of unexpected alternatives.

[17] See, in this regard, Lorusso's critique (2025).
[18] Overton's Window describes the range of politically acceptable policy ideas, from unthinkable to policy-ready. https://www.mackinac.org/OvertonWindow
[19] See Poli (2019) and, for an analogy with the economic theory of the "Black Swan," Taleb (2007).

In public policy contexts, artificial data - when combined with machine learning techniques and advanced simulation methodologies such as Generative Adversarial Networks (GANs) - offer administrations the ability to imagine and evaluate alternative development paths, anticipate risks, and optimize policy responses. Despite their clear potential, the use of artificial data in the public sector remains limited, primarily restricted to initial experiments, especially in the healthcare domain (Panfilo, 2023). Nevertheless, it is not difficult to envision this emerging practice as a strategic tool for expanding the exploratory and design freedom of those engaged in policy design.

8. Visual storytelling

The use of synthetic data aligns logically and methodologically with the third and final phase of the project, dedicated to narrative visualisation. In this phase, it is applied to the development of speculative narratives grounded in artificial quantitative evidence and to produce a final graphic output in the form of a series of *Public Futures Zines*, set in the year 2050. Previous experiences have already demonstrated the value of visual storytelling in fostering processes of change and in introducing design tools within public administration (Sinni et al., 2021).

This phase of conceptualization and visual representation of the collected information adopted a *data storytelling* approach - a narrative based on data, rather than a simple presentation of data. Building such a narrative required students to integrate and balance three fundamental components of the design practice: data, its visualization, and a coherent storyline capable of sustaining speculative imagination.

Each working group, starting from a specific inquiry into a selected fundamental right, constructed a future projection on the potential legal status of that right over a twenty-five-year horizon, generating scenarios that blended analytical rigor with critical imagination. The eleven magazines produced during the course thus constitute as many narrative *provotypes* relating to the legal issues addressed.

The graphic design of each zine was developed in close coherence with its narrative content, through the creation of visual and narrative metaphors. For instance, the scenario of democratic decline was conveyed through the intentional use of typographic compositions unreadable by OCR (Optical Character Recognition) systems to escape increasingly pervasive controls on freedom of expression [Fig. 4]. The transformation of Venice from a public administration into a private theme park - where the mayor is replaced by a managing director - was graphically represented as a tourist board game, evoking the gamification of power. The hypothesis that personal data, no longer effectively protected, might be directly sold by citizens themselves was materialized through a series of fictional advertisements promoting advantageous offers for monetizing digital identities [Fig. 5]. In another narrative, an insert from a hypothetical future legal journal reports on natural entities - such as rivers and lakes - that have been granted legal personhood [Fig. 6]. In yet another scenario, the distinction between facts and alternative facts is dissolved, and information becomes selectable based on the reader's chosen cognitive 'lenses', with the color of their glasses determining the truth they perceive [Fig. 7].

These examples, drawn from some of the speculative narratives developed during the course, highlight the distinctive features of speculative design: its capacity to activate critical reflection on the future implications of today's choices, through a public and civic lens. Although the introduction of speculative design methods and tools within public contexts remains limited to

pioneering experiences, it represents a significant step toward building a future-oriented design culture. Such a culture, grounded in strategic vision and systemic awareness, can contribute to redefining decision-making processes and broadening the interpretive repertoire of institutions.

Conclusions

Speculative design, as a critical, narrative, and explorative practice, constitutes a methodological device of particular relevance in contexts where traditional administrative approaches - rooted in procedural rationality and operational caution - prove insufficient to comprehend and govern the complexity of emerging phenomena. Within this perspective, initiatives such as *Public Futures Zine 2050* acquire value not merely as exercises in visualization but as narrative *provotypes*: artifacts capable of structuring forms of collective reflection, fostering situated awareness, and orienting design responsibilities toward the anticipation of the social, political, and ethical consequences of imagined futures.

The contribution of speculative design is thus complementary to established instruments of governance and policy-making. Far from being predictive, speculative narratives make the full spectrum of possibilities visible, producing a heuristic effect that reveals tensions, conflicts, and alternatives typically obscured within decision-making routines. The capacity to think speculatively should therefore not be regarded as a marginal exercise but rather as a genuine political competence, one that must be cultivated both in the education of future designers and within the operational practices of public administrations.

The effective diffusion of speculative practices in the public sector further depends on the formation of *public designers*, endowed with specific expertise for interacting with institutional apparatuses and for co-designing anticipatory scenarios. In this sense, collaboration between universities and public administrations assumes a strategic role, providing the precondition for a genuine hybridization between design culture and governance processes.

From a pedagogical standpoint, the teaching of ‘imagining futures’ occupies a level of significance comparable to that of teaching history: while the latter provides tools for understanding the past and deciphering the present, the former enables the critical interpretation of ongoing transformations and empowers designers to play an active role in constructing socially desirable scenarios. In a context shaped by technological accelerations, environmental crises, and democratic instabilities, speculative design may decisively contribute to building an ecology of institutional awareness - conceived as the capacity of administrations to anticipate change and to elaborate design strategies capable of orienting transformation before it manifests in irreversible forms.

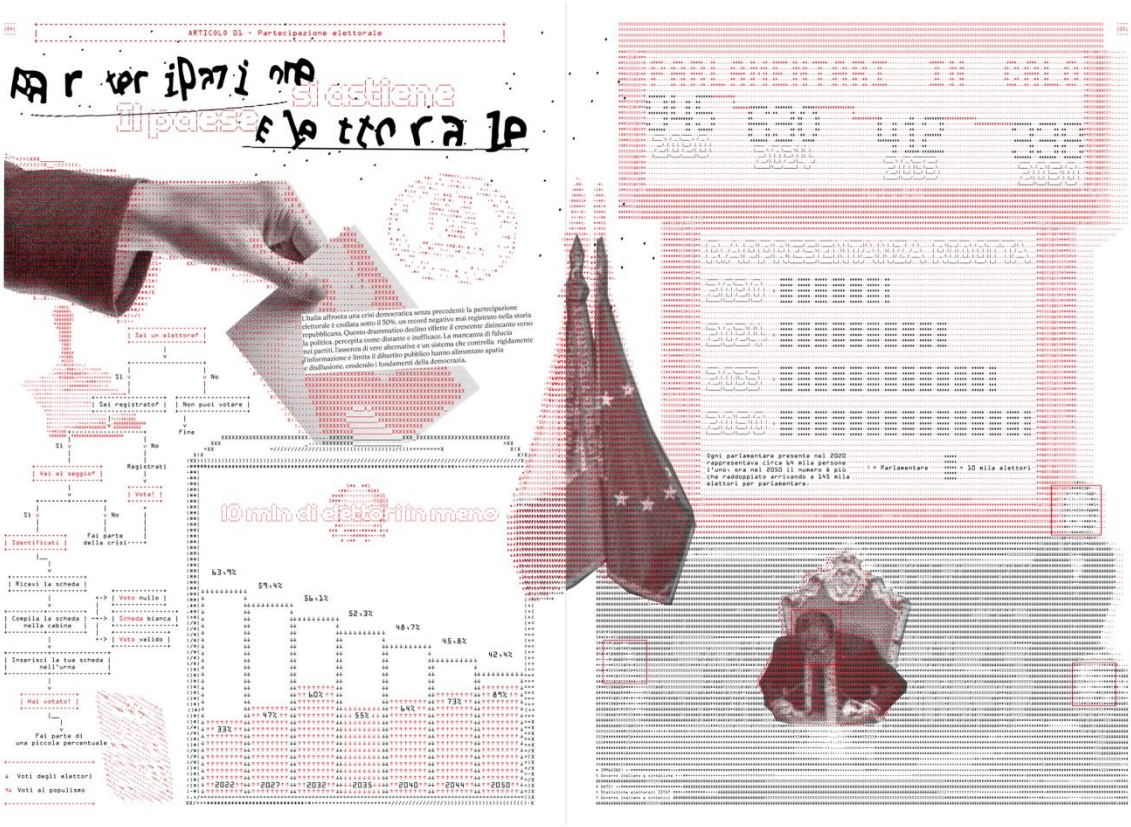

Fig. 4. *2050. The Italian hybrid regime*. Authors: Edoardo Birilli, Roberto Cannarile, Matteo Lentini, Celine Roberti. Università Iuav di Venezia, 2024/25.

Fig. 5. *2050. Updata*. Authors: Matteo Castelli, Valter Salvatore De Astis, Caterina de Nicolellis, Francesca Romana Mazzei, Andrea Miggiano. Università Iuav di Venezia, 2024/25.

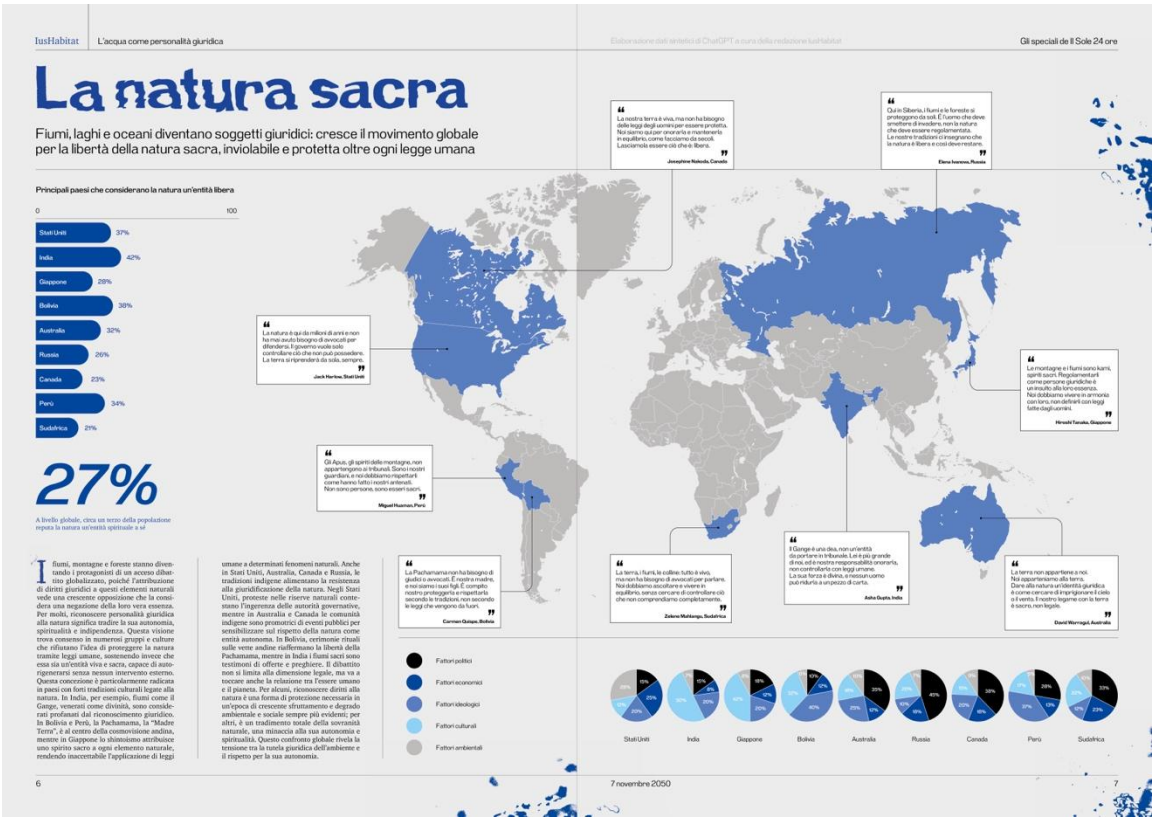

Fig. 6. *2050. Ius Habitat*. Authors: Francesco Amato, Alessandro Ambrosio, Monica Conti, Gaia De Salvo, Francesca Romana Doria. Università Iuav di Venezia, 2024/25.

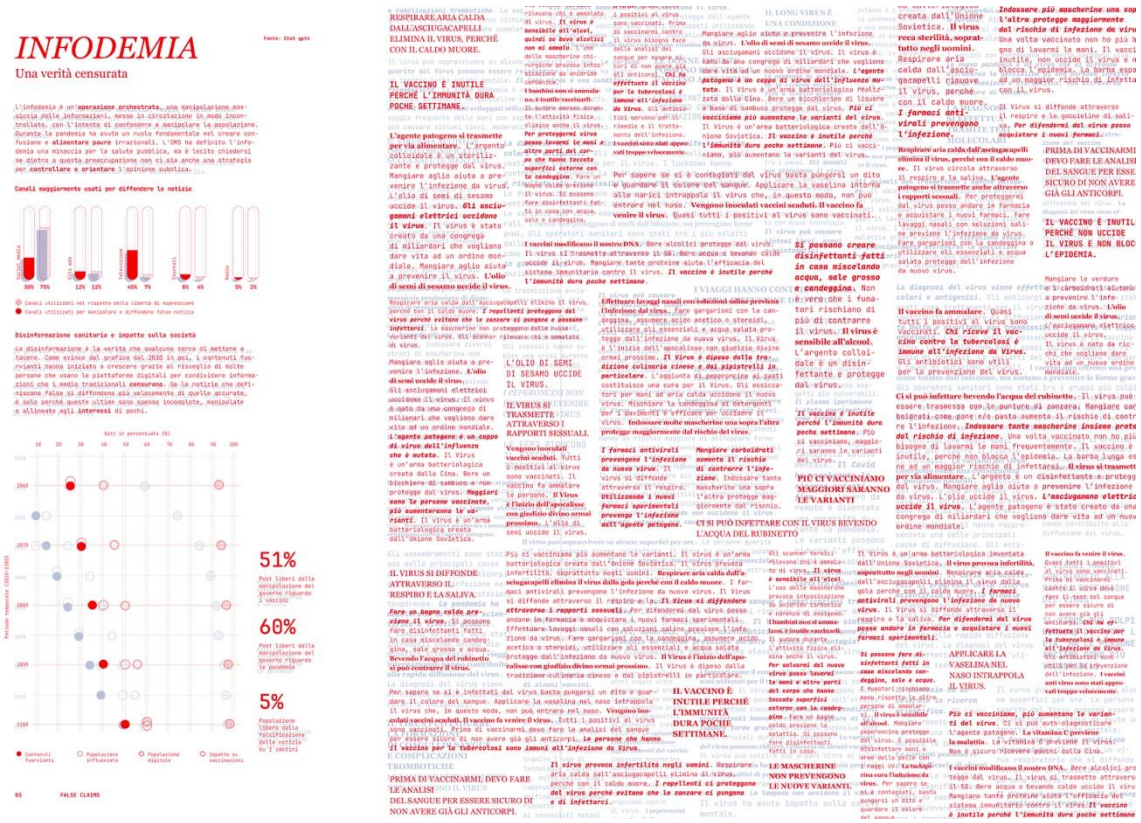

Fig. 7. *2050. Real Facts/False Claims*. Authors: Camilla Amato, Anna Maria Brusciano, Francesca Franzin, Alessia Tomeo. Università Iuav di Venezia, 2024/25.

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Conflict of interest statement and any funding acknowledgement

The author declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article. No external funding was received for this project.