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Panel 2. Expertise for the good? Experts and technoscience governance in turbulent times

Convenors:

Riccardo Emilio Chesta, Politecnico di Milano
Luigi Pellizzoni, Scuola Normale Superiore di Pisa

Keywords: co-production, control and care, post-normal science and post-truth, scientific expertise, technoscience governance

The problem of expertise has recently received renewed attention, rediscussing the scientific boundaries and political meanings of authoritative knowledge. Debates on 'post- truth', the rise of AI, the polarization occurred in the Covid-19 crisis or on climate change – just to mention a few – are not only the sign of a reconfiguration in the public perception of expert authority but speaks of new trading zones and practices of co-production investing the knowledge and power nexus, where normative and technical dimensions are embedded. The question of the 'good' takes on specific connotations when at stake is not science but expertise, that is, the application of scientific knowledge to questions and goals set by a principal, or a client. Likewise, the boundaries and relationships between formally recognized competences and between these and lay local experience and insight becomes more tangled, as at stake is not just an (alleged) 'general interest' but the positionality of the parties involved in an issue. Modern science was born out of the claim that the 'true' and the 'good' could and should be kept separate. Yet, as the case for 'post-normal science' (Funtowicz and Ravetz 1993) argues, the very capacity of technoscience to even more affect social and biophysical processes, the growing uncertainty with which it is confronted make this separation increasingly difficult and controversial - perhaps undesirable, or not? As its alleged 'crisis' (Eyal 2019) highlights, the field of expertise puts in an especially sharp light the issue of how to handle technoscience in a socio- material world whose growing turbulence stems to a significant extent from technoscience itself.

In the framework of the idea of 'technoscience for good', we therefore welcome contributions theoretically or empirically grounded (in such fields as AI, climate, biomedicine, digital-molecular agriculture, etc.) aimed at deepening and updating the reflection over expertise. Relevant topics include but are not limited to:

- Definitions of and distinctions between science and expertise
- Expertise and technocratic vs. participatory governance of innovation
- New challenges for science and expertise over emergent technoscientific controversies
- Expertise, post-truth and science deconstruction
- Expertise as a new form of contentious politics: the role of social movements, grassroots organizations, NGOs, and concerned publics in the social shaping and co- production of technoscientific expertise
- The rise of 'automated expertise' and struggles to democratize artificial intelligence
- Scientists and experts vis-à-vis issues of trust, authoritativeness and responsibility
- Expertise and conflicts over nature: new socio-ecological paradigms, expertise and the redefinition of environmental problems
- How open-endedness, unpredictability and the breakdown of sharp distinctions between human agent and reality acted upon in a growing number of fields affect the application of expertise
- How growing claims for an approach to the world based on a logic of care versus a logic of control affects the understanding of expertise and its social role

12 JUNE 2025 09.00 - 11.00 SESSION 1

ID 233 - Dynamics of Expertise in Civic, Populist, and Melodramatic Epistemologies

Robert P Crease, Stony Brook University

Keywords: Expertise, Acoustical Model, Laboratories, Emplacement, Melodramatic Epistemology

A useful place to examine the dynamics of expertise is in relations between scientific facilities and surrounding communities. This is especially interesting in episodes where a lab has released some amount of toxin into the environment. Studying such episodes was the topic of a grant that I was awarded by the National Science Foundation. In such episodes, experts matter a great deal. People with different concerns and experiences will hear expert voices with different degrees of interest and trust.

How experts are heard does not depend on credentials or track record. Such episodes are a dramatic way to illustrate that expertise doesn't play out in an abstract, logical, or neutral space but "in the wild," so to speak. Such episodes also show that an account of expertise must be based on the fact that humans are first of all sense-makers, not data-gatherers. This suggests an "acoustical" model of expertise. An acoustical model of expertise, like other models, sees expertise, and knowledge formation and development, as a dynamic and ongoing process in which advice is sought and delivered to someone who intends to act. But it sees the movement of expertise as occurring in a hermeneutical (sense-making) space in which expert voices are heard and interpreted differently. One doesn't suddenly show up in a situation, with no pre-conceptions, and then get to choose experts. Rather, we are always already in a pre-understood and evolving situation where some voices appear more authoritative than others because they speak more directly to our experiences and concerns. Acoustical space is thus never neutral. Some voices are always clearer and more audible than others. Investigating the dynamics of lab-community relations must begin by "mapping" the acoustical space. The acoustical model brackets the perspective that there's one situation supervised by one set of privileged experts. That would put us on the outside already knowing the authoritative voice. That's the "scientifically literate natural attitude," or "expert exceptionalism," and bracketing it "Expert (with a capital E) bracketing." Most models of expertise, including information-communication, multidirectional, constructivist, competitive framing, and ethos-rhetoric models, are but special cases of the acoustical model. This paper uses examples of lab-community relations dynamics to determine features of the acoustical landscape, or the emplacement, as well as three different narrative structures that shape the epistemology of expertise: melodramatic, populist, and civic. Experts play a different role in each of these three narrative structures.

12 JUNE 2025 09.00 - 11.00 SESSION 1

ID 265 - Roots of Distrust: The Xylella Epidemic and the Crisis of Scientific Authority in Apulia

Federico Brandmayr, Yale University

Keywords: Conspiracy theory, expert, Italy, left-wing, mafia, multimodal, olive tree, agriculture

This paper addresses a blind spot in studies of public resistance to scientific expertise, which often categorize such opposition in simplistic and politically polarized terms. Left-wing movements are frequently portrayed as justified in challenging scientists depicted as unscrupulous agents of corrupt politicians or as rigid technocrats indifferent to local needs and values. Conversely, right-wing groups are often dismissed as irrational in rejecting guidance from public authorities on issues such as vaccination or environmental regulation. The Xylella epidemic in Salento offers a compelling case where left-wing activists, despite their moral and epistemological sophistication, resisted measures such as systematic monitoring, tree removal, and vector control, with unintended and devastating consequences.

Drawing on insights from cultural sociology, this study analyzes four binary codes rooted in Italy's left-wing and environmental political culture that structured the activists' interpretations. While morally de-

fensible and epistemologically sophisticated, these framings ultimately fostered an antagonistic stance that deepened the destruction of the region's olive groves. The case underscores the broader implications of anti-expert sentiment across the political spectrum and calls for a more nuanced understanding of such dynamics.

12 JUNE 2025 09.00 - 11.00 **SESSION 1**

ID 334 - Expertise for the good of whom? Agnotology and democracy in PFAS-related environmental and health risk knowledge

Paolo Crivellari, Université de Toulouse

Keywords: Agnotology, ARPAV, Expertise, PFAS, Veneto

PFASs (per- and polyfluoroalkylated substances) are a family of over 12,000 chemical substances found in a wide range of products, including cookware, clothing, food packaging, fire-fighting foams and cosmetics. Also known as "forever chemicals" because of their persistence (they are not biodegradable), PFAS can cause harmful effects on health (cancers, hormonal disruptions, immune problems, etc.) and the environment (water, air, and soil pollution). Public policy on PFAS varies from one country to another, regarding especially risk prevention (including thresholds on concentrations in water), mitigation, and remediation. Regulation on PFAS relies on official expertise that is (like in many other risks) incomplete and often challenged by NGOs and citizens that conduct their own research, resulting in forms of contested knowledge that raise questions about whose good is sought after in risk governance: The good of the citizens; of industry; of regulatory agencies?

My proposal is based on exploratory empirical sociological research conducted using qualitative methods in Italy and funded by the Maison de Sciences de l'Homme de Toulouse (France). The case study focuses on the Veneto region, where the identified source of PFAS pollution is the Miteni plant (Mitsubishi-Enichem) in the municipality of Trissino (province of Vicenza), which has contaminated groundwater serving around 300,000 people for decades in the provinces of Vicenza, Padova and Verona. In particular, I will examine the expertise of the ARPAV (the Regional agency for environmental protection of Veneto). This public agency pursues environmental protection and prevention through research, training, information, and environmental education, and is a "boundary organization" that has both scientific competences and policy-making roles. Since 2013, ARPAV has been carrying out qualitative and quantitative environmental investigation activities, performing analyses of PFAS in water and food and biomonitoring the exposed population. Moreover, as part of the European Phoenix project, this agency has introduced an innovative modelling tool to study the pathways of PFAS in groundwater and surface water.

The ARPAV's expertise has been challenged by local groups of citizens, including MammeNoPfas (MomsNoPfas) that conducted their own research and asked for more inclusion in PFAS risk governance, also questioning ARPAV's alleged inaction and selective knowledge, and by Greenpeace, that points out silence, hesitations, and institutional omissions on PFAS contamination in Veneto (https://www.greenpeace.org/static/planet4-italy-stateless/2023/04/b3da1cee-dossierpfasalimentifinal.pdf).

My purpose is not to unveil institutional corruption, collusion, regulatory capture or conspiratorial production of ignorance (there is an ongoing trial in Vicenza on this subjects), but to: 1) shed light on how a public agency routinely operates in confined spaces avoiding public debate and protecting itself and its reputation from external pressure and contention; 2) show that organizations' (and actors') social position can shape what, how, and when they can (and can't) know.

Conclusions will focus on: technocracy and agnotology regarding expertise in PFAS-related risks (also in comparison to major industrial accidents risk governance and expertise) ; the relationship between different types of knowledge; the importance of democratizing expertise on PFAS.

12 JUNE 2025 09.00 - 11.00 SESSION 1

ID 443 - Neither “good” nor “bad”: Neutrality of science in Radical Science Journal

Takvor Voskeritsian, Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών *(National and Kapodistrian University of Athens)*

Keywords: radical science movements, sociology of scientific knowledge, Robert M. Young, neutrality of science, political activism

Since the founding of the British Society for the Social Responsibility in Science in 1969, the British radical science movement included various discrete radical collective endeavors, which developed their characteristic approaches to science and its relation to society. In this talk I will focus on Radical Science Journal, one of the primary journals of the British radical science movement, and its attempts to foster its peculiar theoretical framework. Radical Science Journal was programmatically engaged in challenging established theorizations regarding neutrality of science which, at that time, flourished in various contexts such as the radical science movements, the field of the History of Science and the nascent sociological approaches of the 1970s.

The Radical Science Journal collective was formed in the early 1970s consisting of scientists, historians of science and activists who desired to develop a novel critical discourse regarding science and its relation to society. One of Radical Science Journal’s primary targets was the established “use/abuse” model which was the main critical instrument of the anglophone radical science movements. According to this model, science could function either as a vessel of progress or a force of destruction, depending on its economic, political and social context. Radical Science Journal attempted to move forward from this functionalistic interpretation that presupposed a distinction between a “good” and “bad” science and focused on the ways scientific knowledge was historically produced. The Journal’s priority was to demonstrate that the social context was an inherent constituent of science’s content. Furthermore, Radical Science Journal challenged the whiggish approach that dominated the field of the History and Philosophy of science, according to which, science was an a-social form of knowledge defined exclusively by its “internal” and “rational” elements.

Radical Science Journal’s intention to develop a distinctive theory of science by integrating in its approach tools of historical analyses and the Marxist tradition provoked strong reactions from the wider radical milieu. In my talk, based on unpublished archival material and the Journal’s published issues, I will bring to surface novel ideas, historical actors and ignored debates, important not solely for Radical Science Journal’s peculiar history, but for a series of cultural developments that were taking place at that time as well. The anglophone radical science movements, cold war science politics and the nascent British STS cannot be fully comprehended without Radical Science Journal’s contributions to epistemology and politics.

12 JUNE 2025 09.00 - 11.00 SESSION 1

ID 457 - Boundary Work and the Attainment of Scientific Authority in a Politicized Research Field: Post-9/11 Terrorism Studies and the Emergence of ‘Radicalization’

Stefano Pirisi, Università di Torino

Keywords: Scientific Authority, Boundary Work, Politicization, Autonomy

In the years following 9/11, the research field of Terrorism Studies underwent transformations that challenged the scientific legitimacy of its actors and the knowledge they produced. Particularly in the context of the War on Terror, research on ‘terrorism’ – especially its causes – became highly politicized, undermining the perception of scientific researchers as autonomous from politics and, consequently, weakening their scientific authority. In other words, in this context, the already fragile boundaries separating

Terrorism Studies (as the specific locus of scientific research) from political debates on 'terrorism' further eroded, complicating the claims to scientific legitimacy of the field's actors.

Amid these challenges, a new concept (and the research perspectives accompanying it) emerged and quickly gained prominence both in terrorism studies and in the world of counterterrorism policies: 'radicalization'. The rise of research perspectives focusing on 'radicalization' – characterized by a predilection for the analysis of the individual and the (social)psychological factors pushing him/her toward becoming a 'terrorist' – mitigated accusations of politicization of research, rebuilding part of the scientific legitimacy of the field and its actors, and allowing for new fruitful collaborations between them and counterterrorism policy circles.

In this contribution – drawing from findings from my Ph.D. research – I will offer an analysis of how the emergence of such a research paradigm redefined the field's main research object and delimited the scope of research on terrorism while simultaneously offering an avenue for the technical specialization of the field's actors. Furthermore, I will discuss how such a redefinition of the field's main object of knowledge engendered a peculiar process of autonomization of Terrorism Studies, allowing for a simultaneous redefinition of the boundaries separating scientific research and political debates on the causes of terrorism by depoliticizing terrorism research. The analysis of this empirical case will support broader theoretical reflections on how Thomas Gieryn's notion of boundary work can be reformulated to understand how a boundary separating science and politics takes shape. Following a suggestion initially put forward by Gil Eyal, I will argue that we need to understand boundary work as more than mere rhetorical work (and boundaries themselves as more than rhetorical mystifications of a political-scientific hybrid reality) and that, as suggested by the analysis of the case study, boundary work also involves epistemic work: a redefinition of the very object of research, together with its aims and possibilities. Finally, by looking back at the empirical case, I will reflect on the trade-offs involved in establishing scientific authority on a politically contentious – and thus both risky and highly profitable – object of knowledge: the costs of achieving autonomy.

12 JUNE 2025 11.30 - 13.00 SESSION 2

ID 644 - Rethinking demarcation: science, expertise and the politics of boundary-blurring

Luigi Pellizzoni, Scuola Normale Superiore

Keywords: science demarcation, boundary-work, truth regimes, time politics, responsibility

Boundary demarcation is a highly debated topic in STS, at least since the seminal work of Gieryn (1983). Studies have mostly focused on that between scientific and non-scientific knowledge, and between scientific knowledge and political decision-making. As with all boundaries, the very idea of demarcation between fields or systems presupposes the existence of shared elements. The relationship between separation and sharing has gained salience in recent years, due to both the increasing complexity of scientific issues (Funtowicz and Ravetz 1993) and the growth of public controversies on the social impacts of science (Felt and Wynne 2009). This has paved the way for increasingly sophisticated reflections on the balance between 'co-production' of scientific knowledge and maintenance of a line of distinction, however conceived (Callon 2000; Collins and Evans 2002; Pielke 2007). Another demarcation, that between science and expertise, has remained relatively neglected. The expression 'scientific expertise' is largely taken for granted, as if knowledge could be transferred smoothly from scientific to policy arenas, and only the power effects such shift entails were worthy of attention, especially as related to a 'crisis' of the public role of (scientific) expertise (Eyal 2019; Chesta 2019). Some scholars reject precisely this assumption, emphasising the profoundly different nature of scientific and expert knowledge (Nowotny 2003; Pellizzoni 2011, 2021). Following this line of thought, the contribution aims to put forward the hypothesis of an increasing convergence of science and expertise, the problematic implications of which (for both) being overlooked precisely insofar as the knowledge at stake is considered the same. What does such boundary-blurring consist of and entail? Without aspiring to an exhaustive answer, the contribution aims to reflect on three aspects: the social responsibility of the two types of knowledge; their respective regimes of truth; and their temporal regimes. I will argue that the convergence of science and expertise on each of these aspects is a key way for the ruling social order to obstruct any possibility of change.

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12 JUNE 2025 11.30 - 13.00 SESSION 2

ID 360 - An agonistic epistemic stance to legitimize experts' non-epistemic values

Hernán Bobadilla, Politecnico di Milano

Keywords: Agonism, legitimation, experts' non-epistemic values. relativism, pluralism

The literature on values in science has grown vast and diverse, with broad consensus on the descriptive claim that values influence scientific research. Consequently, debates have shifted toward normative concerns, determining whether values should influence science, which values are acceptable, and what roles they should play. Scholars navigate a spectrum between the value-free ideal and the recognition of science's inherent value-ladenness. Advocates of the value-free ideal defend both its desirability and feasibility, with a focus on non-epistemic values. Critics challenge the feasibility of eliminating non-epistemic values, notably through the gap argument and the inductive risk argument, leading proponents of the value-free ideal to emphasize its desirability.

The appeal of the value-free ideal is often grounded in liberal democratic principles, particularly concerns about scientific experts serving political agendas and the potential erosion of public trust. Lusk (2021) explores the political legitimacy of non-epistemic values of scientific experts informing decision-making, arguing that such values are justified if they align with the outcomes of deliberative democratic processes. While this approach advances democratic considerations in science, I contend that deliberative democracy imposes limitations by requiring rational consensus. Instead, I propose an alternative framework based on agonistic democracy, which better addresses political pluralism and conflict.

Drawing from Mouffe (2000), agonistic democracy transforms political antagonism into constructive dissidence among legitimate rivals. This model acknowledges and mobilizes passions in democratic engagement rather than suppressing them in favour of rational consensus. Furthermore, agonism recognizes the exclusions it entails as inherently political rather than justifying them through rationality. Democracy, in this view, thrives on the confrontation of diverse perspectives rather than striving for unanimity.

Wenman (2013) identifies three central components of agonistic democracy: constitutive pluralism, which prescribes a plurality of societal ends; a tragic view of the world, which sees conflict as endemic rather than resolvable; and the value of conflict, which emphasizes its constructive potential. These tenets, interpreted as values, emotions, policies, and preferences (VEPPs), form the foundation for an agonistic epistemic stance within a voluntaristic framework (cf. van Fraassen 2002). First, constitutive pluralism translates into epistemic pluralism, aligning with van Bouwel's (2014) interactive pluralism. Second, the tragic worldview entails accepting uncertainty at multiple levels: aleatoric (complexity and variability of the world), epistemic (uncertainty in representations of the world), and incommensurability (incompatibility among epistemic systems). Third, the value of conflict fosters an engaged relativism that supports appraisability.

The ensuing epistemic stance aligns with agonistic democracy, offering an alternative framework for legitimizing non-epistemic values of scientific experts. Instead of requiring compatibility with a deliberative rational consensus, legitimacy emerges through agonistic encounters between epistemic agents from diverse epistemic systems. Crucially, this framework acknowledges the political agency of scientific experts. Liberal concerns about the undue influence of experts on political decision-making are addressed, not by suppressing experts' political agency, but by reforming mechanisms of decision-making. These mechanisms should embrace epistemic plurality expressed in agonistic encounters, ensuring that science remains a dynamic and politically engaged enterprise within democratic societies.

12 JUNE 2025 11.30 - 13.00 SESSION 2

ID 503 - What are experts interested in? Tensions between journalistic and scientific objectivity in the debate on the environmental footprint of AI

Theophile, Università degli Studi di Milano Statale

Keywords: objectivity, expertise, journalism

The debate around the environmental footprint of AI creates a high demand for numbers and, with it, a demand for both expertise and objectivity. The extent to which experts can bring objective perspectives in public debates is a longstanding source of preoccupation (Jasanoff, 1990). The influence of experts on decision-making raises concerns regarding the extent to which epistemic claims serve personal interests. Expert claims have been repeatedly challenged in controversies, such as those concerning tobacco's health effects (Oreskes & Conway, 2010), AIDS treatment (Epstein, 1995), nuclear waste disposal (Callon et al., 2011), climate change (Franta, 2022) and, more recently Covid-19 (Au & Eyal, 2022).

The paper investigates the relationship between expertise and objectivity in the quantification debate about the environmental footprint of AI. More than twenty non-scientific organizations have published reports on the environmental footprint of AI, ranging from intergovernmental organizations, to consultancies and associations. Based on semi-structured interviews with report authors, the paper asks, "Why do experts publish reports and seek to become visible in a context of a 'crisis of expertise' (Eyal, 2019) and related distrust towards experts' claims"? In answering this question, it investigates the interests of experts in participating in public debates by examining both their self interests and the collective values they care about (Martin & Lembo, 2020).

Whilst critics point to the impossibility of attaining a purely disinterested "view from nowhere"(Haraway, 1988), two institutions have developed a coherent set of values in order to hide the personal interests of its practitioners: science and journalism. The paper demonstrates that experts mobilize both scientific and journalistic values in order to justify their participation in the debate. In doing so, they expand the reservoir of resources to minimize their personal interests by mobilizing the journalistic ideal of building a shared world and the scientific ideal of progress. Ultimately, the paper contributes to the sociology of expertise by providing a deeper understanding of the relation between expertise and objectivity in democratic societies.

12 JUNE 2025 11.30 - 13.00 SESSION 2

ID 685 - Staging early phase trials on the spot: how experts in oncology navigate scientific, practical and normative uncertainties

Geoffroy Carpier, McGill University

Keywords: Biomedicine, clinical trials, oncology, expertise, uncertainty, boundary work, ethics

Institutional Review Boards (IRB) in oncology face vexing challenges when they review early phase (first-in-human) clinical trials before their initiation. Major human protection regulations and clinical guidelines require IRBs to include in their ethical review – as part of the risk/benefit balance – an assessment of the social value of advancing medical knowledge that these trials seek to offer. Nonetheless, these regulatory texts fall short on details on how to proceed accordingly. While offering no prospect of therapeutic benefit, these early phase trials recruit participants who have exhausted all standard-of-care options. These trials tie up more patients than any other trial type, and more drugs fail in early phase due to lack of efficacy or safety concerns. Moreover, they are usually pursued on the backs of limited preclinical evidence. In oncology, reviewing these protocols is made even more daunting due to 3 factors: the increasing complexity of protocols, the reproducibility crisis and translationality issues. For these reasons, IRBs often need to marshal a wealth of expertise when reviewing these protocols (oncologists, haematologists, geneticists, pharmacologists, nurses, biostatisticians, bioethicists, etc.).

Based on a one-year fieldwork among IRBs in North America, our ethnographic study sought to understand

how these expert collectives navigate the interface of science, regulations and ethics when deciding to initiate early phase cancer trials. What does matter when IRB members review their scientific rationale? How do they approach and structure their review process in the case of heightened scientific, practical and normative uncertainties?

Our study suggests that IRB experts in oncology frame their review process with respect to 3 epistemic perspectives: authority and reputation; temporality and promissory futures; and, opportunity and practicality. IRB members articulate these perspectives based on a specific moral economy (including affects, trustworthiness and responsibility) and boundary work, so as to articulate these epistemic perspectives together, make the protocols they review tangible, alleviate uncertainties and ultimately reach a situational consensus.

13 JUNE 2025 09.00 - 11.00 SESSION 3

ID 145 - What is good for whom? Actors, expertise and (un)revealed purposes within environmental governance strategies

Valentina Capocefalo, Università degli Studi di Milano Statale

Keywords: socio-ecological relationship, environmental governance, Ecosystem Services, Nature's Contribution to People

Benefits provided by the ecosystems and biodiversity have been described as ecosystem services (ES) starting from the late 1980s. The ES analytical framework consolidated during the 1990s especially through the scientific literature produced by economy and ecology disciplines. Later, it reached the peak of its success through the Millennium Ecosystems Assessment (MEA) in 2005. In the following decade, the paradigm came under harsh criticism. Controversial aspects were noted initially in relation to payments for ecosystem services (PES) schemes. Later, other limits have been detected in the few attentions paid to the local geographical context and to environmental justice issue. The critical deconstruction of the ES paradigm generated two main effects. On the one hand, it increased the awareness of the importance of the socio-cultural and political dimensions within the paradigm itself. On the other hand, it prompted some scholars to develop partly alternative analytical frameworks. Among the latter, the best known is Nature's Contribution to People (NCP). It has been promoted by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) starting from 2015. The debate within the newest paradigm involves scholars with a wide range of disciplinary backgrounds. The assessment produced generally pay more attention on what is defined as 'indigenous and local knowledge' and they directly involve indigenous and local communities into the debate. Although the intentions manifested are virtuous, some scholars state that even within this paradigm power inequalities are not adequately highlighted.

Both MEA and IPBES constitute science-policy interface arenas in relation to socio-ecological issues. Their work engage scholars, politicians, NGOs and private sector actors at different geographical scales. The assessment produced by these international bodies are never neutral. Indeed, all the actors engaged embed different knowledge, values and goals, which are not always convergent. Therefore, the final version of the official documents released are the outcome of a power relationship between the different parties involved. They reflect a negotiation rather than the 'true'. Since the assessments produced are not purely scientific sources, there is an ideal of "good" in them, even when this is not overtly made explicit.

Given these premises, the contribution has three main purposes. Firstly, it aims to define what has been identified as 'good' within the two analytical frameworks here considered. Secondly, it aims to analyse which kind of expertise is required to reach this ideal of 'good'. Finally, it aims to explore how ES and NCP shape the approaches to current turbulent times. Relating to the latter purpose, the paper questions how the two paradigms promote caring practices and enable us to reconfigure our relationship with the ecosystem and biodiversity. The contribution will be elaborated starting from the consultation of a rich bibliography. Additionally, it will be enriched by the experience gained on the research field during the investigations conducted within some urban agriculture experiences on the Milanese territory.

13 JUNE 2025 09.00 - 11.00 SESSION 3

ID 608 - Forms of Anticipation of Energy Transition Policies in Europe

Alexandre Violle, Mines Paris – PSL
Brice Laurent, Mines Paris – PSL

Keywords: expertise, politics of anticipation, civic epistemologies, mineral ressources, energetic transition

This presentation explores how expertise is mobilized to inform energy transition policies in Europe. Based on a qualitative investigation into the genesis, development, and circulation of criticality studies—a form of geological and economic knowledge aimed at modeling future primary resource needs for a given economy—we draw on a variety of cases where experts are called upon to develop such studies to guide

public action in Europe (e.g., the European Commission, the French national geological service). We aim to characterize civic epistemologies (Jasanoff, 2011) in which the ways of modeling future resource needs, the role of state intervention in securing mineral resource supply, and a specific conception of the common good are jointly problematized.

To do so, the presentation will first revisit the origins of this expertise in the United States, showing that early criticality studies were developed during wartime in the 20th century by the US Geological Survey to establish strategic reserves of mineral resources. This knowledge, intended to guide public action, was coupled with a wartime economic conception in which the state—and not the market—was seen by geologists and economists as the key actor in securing raw materials. We then demonstrate how this form of knowledge gradually lost influence in both the US and Europe after the Cold War. However, around the 2010s, this type of expertise was once again championed by countries in the Global North, particularly to address supply risks linked to China's dominant role in the production and export of certain strategic minerals (including metals known as "rare earths").

We show how this knowledge is now being solicited in Europe, with different ways of framing the role of the state, the economy, and the common good. In some cases, such as with the European Commission, it involves thinking about the European energy transition by anticipating market failures and supporting private investment in new resource production sectors. In other cases, particularly in various organizations in France, it involves considering the energy transition in relation to supply risks linked to war or debating the use of mineral resources in the functioning of national economies.

13 JUNE 2025 09.00 - 11.00 **SESSION 3**

ID 686 - Bridging policy and practice in EU data governance: Co-producing expertise and best practices with the Social Economy's Data Code of Conduct

Dwayne Ansah, Universiteit Utrecht
Mai Ishikawa Sutton, Commons Network
Sophie Bloemen, Commons Network

Keywords: Data governance, social economy, institutionalization, expertise

The European Union (EU) seeks to both modernize its digital sector and foster the social economy, as outlined in the new Action Plan on the Social Economy and the Transition Pathway for Proximity and Social Economy. Within EU data policy, the Data Governance Act (DGA) introduces new legal mechanisms to facilitate ethical data sharing and establish trust between actors. Among them, data intermediaries are envisioned as key instruments for governing data flows in ways that promote economic growth and social innovation. However, these regulatory interventions risk imposing rigid frameworks that fail to accommodate the grassroots, cooperative data-sharing practices that have long sustained the EU Social Economy.

This paper examines how expertise within the EU Social Economy is mobilized to bridge European economic policy objectives with grassroots cooperative data governance. Rather than treating expertise as a property of individual actors, we draw on relational understandings of expertise to show how it is co-produced through dynamic interactions between social economy actors, policymakers, technical experts, and regulatory frameworks. Our core argument is that expertise in cooperative data governance is not simply being recognized or formalized through EU regulation. Rather, data governance is being negotiated in an ongoing process where social economy actors must balance regulatory compliance with their pre-existing practices, infrastructures, and values.

To investigate this process, we adopt an embedded, action-oriented research approach, engaging directly with the co-production of the Social Economy's Code of Conduct (CoC) for data management and sharin). As co-authors of this CoC, we have participated in consultation meetings, focus groups, and real-time negotiations with EU policymakers and social economy actors. This insider position allows us to analyze not just the outcomes of these discussions but also the tensions and frictions that arise in the process. For instance, we reflect on the challenges of explicating cooperative values into a soft law framework that

prioritizes EU harmonization and economic scalability. We also consider how different forms of expertise, legal, technical, policy and grassroots, compete or converge in shaping the final document.

Rather than portraying EU data governance processes as either enabling or constraining, our analysis highlights its ambivalent effects. On one hand, the DGA provides an institutional space where socially-oriented data-sharing practices gain legitimacy, allowing social economy actors to shape formal governance mechanisms. On the other hand, these same actors may face the burden of adapting their practices to fit regulatory expectations, potentially shifting their priorities away from grassroots cooperation toward bureaucratic compliance. We situate this dynamic within broader debates on the institutionalization of digital solidarity economies, asking whether regulatory recognition ultimately reinforces or transforms grassroots expertise.

By analyzing the social economy's role in co-producing data governance frameworks, this paper contributes to scholarship on expertise, regulatory co-production and the politics of data governance. We argue that the participatory turn in EU data policy, while promising. requires ongoing critical and reflexive engagement to ensure that formal institutionalization does not impede the very cooperative principles it aims to support.

13 JUNE 2025 09.00 - 11.00 **SESSION 3**

ID 785 - Good Fences Make Good Experts: Unpacking the European Commission's Discourse on Evidence-Informed Policymaking

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Keywords: European Commission, expertise, evidence-informed policymaking, science-policy interface, discourses

Scholarship on the European Commission emphasises how the institution extensively relies on expertise and access to knowledge as a crucial source for legitimation and influence. This technocratic approach has been raising concerns about the accountability and democratic legitimacy of EU decisions, to which the institution has responded, over the last decade, with stronger calls for a 'more political' Commission. Nonetheless, the idea of evidence-informed policymaking still is at the core of the Commission's approach, as the new élan of the Better Regulation agenda and recent initiatives on 'science-for-policy' suggest (European Commission 2021; 2022). These calls for a more prominent role of evidence in policymaking have been launched in a context characterised by rampant misinformation and growing contestation of experts – what has been defined as a 'crisis of expertise' (Eyal 2019, Abazi et al. 2021). Yet, there is still limited research on the Commission's political work in organizing this science-policy interface. Considering such developments, the question guiding our analysis is: how does the Commission envision the role of science and expertise in the EU policymaking processes, and how has its approach evolved over time?

Drawing on existing research in critical policy studies and STS, we inquire into the discursive construction of policymaking as a terrain for science-based policies. We aim to understand how these discourses redefine the expected role of science and expertise in policymaking, tapping into the Commission's work of balancing 'technocratic' arguments and concerns about democracy and accountability. To explore this question, the paper analyses official documents and reports issued in the last two decades, to reconstruct the Commission's discourse on the role of science and evidence in policy. In order to corroborate and give empirical depth to this analysis, we also draw on a wider range of empirical materials, including interviews with relevant stakeholders and field notes. Our analysis aims to provide a better understanding of how the Commission (re-)produces discourses and practices about evidence-informed policymaking and adapts them to current challenges, such as the so-called crisis of expertise.

13 JUNE 2025 09.00 - 11.00 SESSION 3

ID 813 - Leveraging Knowledge and Expertise Deficits in Autonomous Vehicle Rulemaking

Eilat Navon, וליא־רב תטיסרבינוא *(Bar-Ilan University)*

Keywords: autonomous vehicles, knowledge, regulatory rulemaking

This paper examines the regulatory process that authorized the deployment of autonomous vehicles (AVs) in California, addressing how knowledge is shaped and validated within regulatory frameworks when prior knowledge and expertise have not been established.

Regulatory authority over AVs in California is divided between two agencies: the California Department of Motor Vehicles (DMV), which oversees safe operation on public roads and licenses AV companies, and the California Public Utilities Commission (CPUC), which determines whether AV service providers can safely transport passengers. This paper analyzes the CPUC-led regulatory process from 2016 to 2023.

The CPUC's regulatory authority over AVs is derived from its broader mandate to oversee passenger charter-party carriers. Consequently, AV regulations are integrated into the existing legal framework governing passenger carriers, which primarily emphasizes business operations and technical compliance—including liability, drug testing, compensation insurance, and enforcement mechanisms such as sanctions and unannounced inspections.

Rather than designing a regulatory framework specifically tailored to AV technology, CPUC adopted a trajectory-based regulatory approach, incorporating AVs into pre-existing passenger service regulations with minor procedural adjustments. By embedding AV regulation within traditional passenger transportation frameworks, CPUC maintains continuity in its regulatory approach while establishing control over knowledge production, reinforcing industry-driven data as the foundation for future decision-making.

The study argues that in the regulation of innovation, evidence-based knowledge is often scarce (Asquer & Krachkovskaya, 2020) creating a temporal point in time of knowledge symmetry between regulators and stakeholders. This symmetry enables a negotiated co-production of policy in which stakeholders without prior expertise contribute to the establishment of regulatory knowledge. However, this paper contends that the absence of prior knowledge and expertise is leveraged by regulatory agencies to consolidate authority and shape rulemaking without substantive evidence-based opposition.

The discretionary power of regulators to shape knowledge is reflected in their ability to determine what constitutes valid evidence. By prioritizing industry data reporting, regulators construct the basis of future knowledge while simultaneously marginalizing alternative sources of information. Although hundreds of citizen and first responder reports of AV-related incidents exist, they are often dismissed as "anecdotal." This prioritization normalizes certain knowledge claims while excluding others, as demonstrated by the CPUC's framing of the issue: "How should the CPUC move beyond anecdotal and/or ad-hoc information so we may quantitatively and objectively monitor impacts (positive or negative) of AV operations to promote passenger and public safety, AV program goals?" (Consumer Protection and Enforcement Division [CPED], 2023). By privileging industry-generated data over public testimony, regulators exclude potential insights that could challenge technological assumptions otherwise rendered invisible (Wynne, 1988).

The regulator's power to construct and guide knowledge formation aligns with Bowker and Star's (2000) concept of modes of clearance and selective erasure—whereby the creation of a new knowledge base, grounded in industry data, effectively renders other forms of knowledge obsolete. This process reinforces specific regulatory priorities while marginalizing alternative perspectives.

13 JUNE 2025 09.00 - 11.00 SESSION 3

ID 200 - The Role of Experts in Clean Air Litigation: Insights from Public Interest Litigation in Italy

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Keywords: Right to Clean Air, Public Interest Litigation, Expert Evidence, Environmental Justice

This paper explores the critical role of experts in public interest litigation (PIL) aimed at protecting the emerging Right to Clean Air in cities, focusing on cases in Italy, particularly Turin and Milan, while incorporating comparative perspectives from the EU and the UK.

Drawing from the Right to Clean Air (R2CA) research project based at the University of Turin, the paper investigates how scientific evidence and expert contributions shape judicial decisions, influence air quality policies, and questions governmental accountability. The project also investigaes that role of civil society organisations such as Torino Respira and Cittadini per l'Aria, which are at the forefront of PIL in the country and the EU, advocating for the right to clean air through legal actions (criminal, civil and adminsitrative actions). The analysis emphasises the interplay between science and law, identifying challenges such as the accessibility and credibility of scientific evidence in courtrooms and the opportunities for advancing environmental justice.

This paper will examine how experts-scientists, technical consultants, and academics-contribute to clean air litigation, shaping legal arguments and judicial outcomes. While focusing on Italian cases, the paper broadens its analysis to compare the state of clean air litigation in the EU and the UK, including an exploration of "Ella's Law", which seeks to enshrine the right to clean air into UK law following the landmark case of Ella Adoo-Kissi-Debrah. Additionally, the paper aims to provide a comprehensive exploration of the use and impact of expert evidence in clean air litigation to date. By drawing on insights from Science and Technology Studies (STS), the paper will explore the dynamics between law and technoscience in the context of environmental litigation, focusing on how courts negotiate the complexities of scientific knowledge and its implications for policy-making. It will critically assess the challenges involved in leveraging expert contributions, such as ensuring the accessibility, reliability, and clarity of scientific data, and explore opportunities for enhancing collaboration between the legal and scientific communities. By examining key cases in Turin and Milan alongside examples from the EU and UK, the research will highlight similarities and divergences in how courts engage with scientific evidence and uphold clean air rights. The paper adopts a socio-legal approach, combining comparative case-law analysis with empirical data from the R2CA project. It incorporates the outcome of interviews with stakeholders-activists, legal professionals, scientists, and policymakers-to provide insights into the dynamics of using expert evidence in court.

The paper contributes to the discourse on the right to clean air by shedding light on the critical role of experts in bridging the gap between science and law. It highlights lessons from Italian cases and broader European and UK experiences, offering practical insights into the use of PIL as a mechanism for environmental justice. It also explores pathways for improving the effectiveness of expert contributions in litigation, enhancing the dialogue between legal and scientific communities, and fostering governmental accountability.