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**Article:**

Pykett, J., Antanavičiūtė, M., Ball, S. et al. (2026) Ethics-policy advisory ecosystems: enhancing operative, discursive and adaptive capacities. *Contemporary Social Science*. ISSN: 2158-2041

<https://doi.org/10.1080/21582041.2026.2631477>

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# Ethics-policy advisory ecosystems: enhancing operative, discursive and adaptive capacities

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**To cite this article:** Jessica Pykett, Marija Antanavičiūtė, Sarah Ball, Beatrice Dippel, Warren Pearce, Holger Straßheim & Inga Ulnicane (19 Feb 2026): Ethics-policy advisory ecosystems: enhancing operative, discursive and adaptive capacities, Contemporary Social Science, DOI: [10.1080/21582041.2026.2631477](https://doi.org/10.1080/21582041.2026.2631477)

**To link to this article:** <https://doi.org/10.1080/21582041.2026.2631477>



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Published online: 19 Feb 2026.



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## Ethics-policy advisory ecosystems: enhancing operative, discursive and adaptive capacities

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### ABSTRACT

The organisational practices, status and role of policy-focussed ethics advisory committees are significant in relation to scientific advances, societal transformations and crisis situations. Existing research has explored the effectiveness, de/politicisation and deliberative aspects of national ethics bodies, but their role in wider ecosystems of policy advice is neglected. It is sometimes argued that ethics committees have little impact on practices on the ground, but this is empirically untested. Our key concern is to examine the governance cultures and practices of ethics advice and ethics expertise in specific relation to policymaking. Qualitative interviews with 60 ethics advisors and civil servants in Australia, Germany and the UK are analysed to identify critical factors which shape the operative, discursive and adaptive capacity of ethics-policy advisory ecosystems. Based on our findings, we present a novel framework to inform future comparative analysis of national ethics-policy advisory ecosystems. We argue that a focus on governance capacities would help to enhance how governments use ethics committees and ethics expertise within the wider science/technology/policy nexus. We show how social science and humanities scholarship is responding to new demands to navigate the normative and descriptive with regards to its engagement with ethics advice.

### ARTICLE HISTORY

Received 21 May 2025  
Accepted 6 February 2026

### KEYWORDS

Deliberative practice; ethics expertise; national advisory bodies; policy advisory systems; public bioethics; science-policy interface

## Introduction

Governments solicit ethics expertise to inform policymaking and to understand the potential impacts of regulation, policy implementation and inaction. Ethics expertise has been defined as ‘the knowledge, skills, and institutional capacities required to inform and analyse normative disagreements over questions of public concern’ (Brown, 2009, p. 50). Ethics advice refers to the provision of normative know-how to guide

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action, while ethics knowledge refers to specific content rooted in moral philosophy. Many national ethics bodies, which provide ethics expertise to policymakers, have historically been informed by specific branches of ethics knowledge, including medical, public health, applied and bioethics. We distinguish between ethics advice and ethical advice to indicate that advice informed by ethics know-how is not equivalent to determining the sole pathway towards a morally good decision.

Ethics expertise is often required for matters of acute public interest, for instance when policies relate to contested or competing notions of the public good and personal freedoms, are accompanied by anticipated risks or harms, or are deemed highly controversial. Ethics experts can make visible value-laden policy decisions and enhance understanding of how specific principles, perspectives and moral frameworks inform these. As such, there have been calls to study the governance practices that shape how societies define bioethics expertise and respond to bioethical questions (Montgomery, 2016). In this paper, we address the lack of basic empirical and comparative studies on the organisation, composition and outcomes of diverse forms of government ethics advice. Our concern is to examine the central question of how social science knowledge intersects with science, technology, and humanities forms of knowledge in shaping perceptions of the boundaries between evidence and values within policy professions and governmental institutions. We propose an original framework focussed on governance capacities to advance comparative international analysis of the primary factors that shape this intersection.

Ethics expertise is particularly relevant in situations of (poly)crisis, urgency and uncertainty. Commissioning ineffective or single-interest forms of ethics expertise could lead to a neglect of value judgments, policy decisions which fail to consider trade-offs and unintended consequences, and a lack of transparency, legitimacy or accountability. In turn, this can uphold systematic injustices, weaken democratic rights and dignity, diminish fair processes, institutions and outcomes, and lead to a decline of public reasoning and deliberation. A lack of ethics advice in government could lead to scandals in public services, public health, public safety, across personal to global scales (Ball, 2025; Jamrozik, 2022).

We offer the concept of an ethics-policy advisory ecosystem, which consists of an inter-linked set of actors, institutions, mechanisms and practices interacting at different levels to provide expert judgements and value reflections on what is morally and normatively best for policy. This is distinct from purely clinical or research ethics bodies, and also from ethical behaviour and standards in public life, government corruption or ministerial codes. These latter manifestations of ethics advice apply established normative frameworks in specific professions rather than seeking to generate novel frameworks for ethics in governance and policy more generally.

Existing research on national ethics bodies or commissions has explored their effectiveness (Köhler et al., 2021; Mali et al., 2012), de/politicisation (Braun & Kropp, 2010; Kelly, 2003; Littoz-Monnet, 2021) and deliberative elements (Bogner, 2019; Brown, 2009; Mali et al., 2012; Montgomery, 2017; Moore, 2010; Poort & Bovenkerk, 2016; Stahl et al., 2019). While ethics and values are central concerns across the humanities and social sciences, we argue that this could be enhanced by specific elaboration of the particularities of ethics as a form of knowledge generated and transacted through the interactions between ethics advisory bodies, policy advisory systems and governments.

By focussing on the governance of ethics-policy ecosystems, we aim to address long-running debates within social science scholarship concerning how scholars navigate

descriptive versus normative modes of analysis (Lynch, 2014, p. 98). These debates are ever more salient in contexts where the COVID pandemic has seen the relationship between government, experts and publics plunged into yet deeper crisis (Eyal & Medvetz, 2023). In the Science and Technology Studies (STS) field and more widely, given the reported increase in public scepticism towards scientific forms of expertise, researchers are increasingly compelled to be more cautious of the normative critiques of science that they have previously developed and the dangers that this may entail (Latour, 2004). In an era characterised by 'post-truth' (Lee, 2024), 'strategic ignorance' (McGoey, 2019) and 'misdirection' (Peeters Grietens et al., 2022). This situation opens up new dilemmas in the ways in which policymakers engage with different forms of knowledge such as ethics knowledge or scientific knowledge.

A number of previous studies have unpacked the relationship between technocratic knowledge, expertise and decision-making. Ethics advice can be understood as having distinctive types of impact ranging from the symbolic to the procedural. For example, Tallacchini (2009) has argued that ethics bodies at the level of EU policymaking disempowered citizens' value judgements by 'outsourcing' and 'purifying' values by delegating them to specialised ethics experts. 'Government ethics regimes' are said to diverge from technocratic forms of expertise with regard to their forms of reasoning, orientation to values, emotions, conflict and communication with publics (Braun & Kropp, 2010, p. 859). At the same time, it is argued that through their inclusion of non-scientific knowledge and public talk, government ethics committees actually *limit* the normative evaluation of the political and economic interests that underpin science and technology development (Braun & Kropp, 2010). Others more recently argue that they are instruments of legitimisation and serve a purely symbolic function (Littoz-Monnet, 2021).

Today, long after the analyses provided by Braun and Tallacchini, specialist ethics advisory committees and national ethics bodies are even more widespread globally, as a result of the work of international bodies such as the Council of Europe, UNESCO and the World Health Organisation. They cover a wider and increasingly fragmented range of specific issues, including pandemic ethics, neuroethics, nano ethics, robot ethics, environmental ethics, data ethics and AI ethics. On the one hand, ethics advice has epistemic features similar to scientific knowledge, including specific epistemic communities, rigid and peer-reviewed knowledge claims and professional standards. On the other hand, ethics knowledge is based on the 'entanglement of facts and values, diversity of lived experiences and power dynamics' (Parker, 2026, p. 2). In this paper, we are therefore asking how this entanglement between scientific knowledge and values is dealt with within ecosystems of ethics advice, and how governance practices shape the institutional epistemologies and standards of value judgement that dominate in different national contexts.

The core aim of this paper is to produce an empirically-informed account of the principal factors at play in shaping the *operative, discursive and adaptive capacities* of 'ethics-policy advisory ecosystems' at national levels (see Table 1). An ecosystem is a living system which adapts in relation to its environment. We thus use the term as a metaphor, preferring it to 'system' or 'infrastructure' because it connotes an *adaptive* organic, social system characterised by networks, material considerations, practices and change. We are equally mindful of the overuse of the term ecosystem which can politically downplay the inseparability of social and ecological systems (LeBlanc, 2023). Our approach chimes with recent approaches to the national assessment of science-for-policy ecosystems (Oliver,

**Table 1.** Framework for comparative analysis of ethics-policy advisory ecosystems.

Governance cultures: Operative capacity

- Multi-level qualities (polycentric, self-organisation, diversity of institutional types, working across scales)
- Bureaucratic cultures (membership, norms and behaviours, decision making processes, conflict resolution, accountability and autonomy)
- Alignment with political system (level of independence, function of advice, statutory or not)

Pluralisation of expertise: Discursive capacity

- Approach to public engagement (consultative, participatory, public acceptability)
- Forms and definitions of ethics expertise (specialisation, fragmentation, register of objectivity)
- Deliberative practices and forms of reasoning (orientation to values, emotions, lived experience, conflict)

Uncertainty and temporalities: Adaptive capacity

- Orientation to uncertain knowledge and futures
- Crisis situations and how issues become ethical moments
- Ethical preparedness (temporal strategies – planned, foresight, policy embedded, *ad hoc* or permanence of institutions)

2022; Pedersen, 2023) and long running policy capacities literatures (Brenton et al., 2022; Linquiti, 2024). The key distinction is that ethics-policy advice involves forms of knowledge which explicitly address the normative content of policy making and the weighing up of potentially competing value-systems, rather than being based on a claim to neutrality or to evidence adhering to the scientific method.

The paper argues that advancing understanding of governance capacities can enhance the role of scrutiny within ethics-policy advisory ecosystems, building on previous insights on ethics and public trust from STS and bioethics literatures (LeBlanc, 2023; Montgomery, 2024). While there is overlap, we think the three capacities are useful in describing how policy advice is constrained by how policy advisory ecosystems operate (operative capacity), how they communicate (discursive capacity), and how they navigate change, controversies and crisis (adaptive capacity).

By examining how ethics advice is sought and provided at a national level, we propose a range of conceptual entry points for understanding the dynamics and interplay of scientific and moral questions in policy processes. The paper begins by providing a summary of the evolution of national bioethics committees to highlight their historical significance. The second section uses interview data to illustrate how the organisation of ethics advice to governments matters politically. We argue that their forms of organisation, pluralistic commitments and contexts of uncertainty are significant features. The framework makes visible a number of conceptual concerns which we address throughout the paper, including how the organisation and governance of ethics advice shapes policy, how advisors and policymakers deal with uncertainty and the temporalities of policymaking, and how ethics-policy advisory systems interact with publics. We end by setting out the implications of our research on the future governance and constitution of ethics-policy advisory ecosystems. We undertake the descriptive work of comparing institutional alternatives combined with the normative work of identifying how best to enhance ethics capacities within the wider science-technology-policy nexus.

## Methods

Following the research strategy of ‘Most Similar Systems Design’ in comparative political sociology, case study countries were selected to compare most-similar liberal democratic and political-economic situations. These similar cases diverge significantly, however, in

terms of how ethics advice is given, which actors are involved and how it is justified in practice. Our proposed explanation for such variance is that differences in national ethics advice in terms of degree of centralisation and independence from government can explain such variance (Anckar, 2008). The UK currently has a dispersed ecosystem of government ethics advice, Germany has a formal centralised one, and Australia is more informally networked. We also carried out institutional mapping, identifying hundreds of different ethics committees and board types across the three national cases (reported in a separate paper). The study is based on 60 semi-structured interviews carried out in 2024 with individuals and representatives of organisations who previously served on ethics advisory bodies within the public sector or had been advisors on ethical questions to policy decision-makers in the UK, German or Australian governments, and civil servants who have sought such advice. Institutional mapping of ethics bodies and government committees in each nation produced longlists of 74, 85 and 23 potential interviewees respectively, from which 24, 20 and 16 replied and were interviewed, mainly online with some taking place in person. Interviews were transcribed and coded using qualitative data analysis software (Nvivo 14) by four researchers. Flexible coding methods (Deterding & Waters, 2018), including both inductive and deductive codes informed by governance literature were used to generate a framework for future research into how the evolution of cultures of ethics expertise varies nationally, which we present in Table 1 as a summary of how the empirical evidence informs the analytical framework.

### Ethics-policy advisory ecosystems

Research in law, (bio)ethics, health governance, political theory and public administration scholarship on ethics advisory systems allows us to retrace the evolution of national bioethics committees to provide a very brief history (e.g. Hanna et al., 1993; Layton, 1993; Mandal et al., 2017). The questions of who an ethics expert is and what is presented as the ‘best’ model of ethics commissions are of central concern among bioethicists and political philosophers interested in the role of ethics commissions vis-à-vis government advice (e.g. Hegstad, 2024) and distinct (republican, democratic, communitarian) political regimes more broadly (e.g. Brown, 2009). It is thus pertinent to examine in what kinds of political contexts they emerged and in what kinds of institutional forms.

In Europe, national ethics committees emerged following largely medically focussed institutions and codes associated with the Nuremburg Trials and World Medical Association Declaration of Geneva in 1947. These were in response to the abuses carried out by doctors under the Nazi regime (Baker, 2020, p. 49). In the UK, local research and clinical ethics committees originated in the 1960s in teaching hospitals and through institutions such as the Royal College of Physicians (Hedgecoe, 2009). During the 1980s, there were calls for a UK national ethics committee in order ‘to meet the growing public demand for candour’ in science and biomedicine in the face of public hostility to science (Warnock, 1988). Warnock’s definition of such committees in the *British Medical Journal* indicates that ethics expertise has long been a problematic term: ‘They would not be experts: there is no such thing as an ethical expert’ (Warnock, 1988, p. 1626, emphasis added).

In Australia, there are many regional and some national ethics bodies associated with data ethics, professional medical bodies and health research, but there is no central

national ethics committee. The Ethics Centre, along with the University of New South Wales and the University of Sydney, appealed for national government funding in 2024 to establish an Australian Institute for Applied Ethics, with a broad remit to strengthen trust in public institutions and build ethics capacity and national ethics infrastructure.<sup>1</sup> In Germany, the National Ethics Council of Germany was established in 2021, later becoming the Deutscher Ethikrat or German Ethics Council in 2008, following a formal mandate to serve the German Bundestag or Federal Government by virtue of *the* Ethics Council Act 2007.

By 2019, there were 124 national ethics committees in 100 countries worldwide, mostly working on bioethics issues (Hummel et al., 2021). 47% of these were in countries classified by the World Bank as high-income countries, 10% were in low-income countries. This is indicative of a growing but geographically uneven institutional field of global bioethics, in which the boundaries, origins and *a priori* convictions of bioethics are increasingly being challenged. There are thus emerging calls for more pluralistic approaches to the field's philosophies, approaches to justice, solidarity, what it means to be human, converging ecological, economic and health crises and inequalities (Langlois, 2020; Prainsack & Buyx, 2017; Snead, 2020; Viaña, 2024). These debates suggest a pressing need to consider what makes national and sub-national ethics-policy advice nationally (and globally) relevant, valid, capable and useful in specific organisational contexts.

In the following sections, we address this challenge of understanding the critical factors shaping what we term the *operative, discursive and adaptive capacity* of ethics-policy advisory ecosystems. These categories, derived from our interview data, are used to suggest ways to improve three central capacities for these ecosystems. While this ethics capacity framework is firmly rooted in our empirical findings, it also presents a conceptual contribution to ongoing debates on the capacities of policy advisory systems. With his work on 'policy analytic capacities', Howlett was among the first to extend existing approaches on administrative capacity to the acquisition and utilisation of expert knowledge in governments (Howlett, 2009, pp. 161–163). He argues that the assessment of analytic capacities may be an important step in both identifying and avoiding typical policy failures. We bring this perspective into dialogue with STS problematisations of expertise and public participatory processes in science (e.g. Eyal & Medvetz, 2023; Wynne, 2007, p. 104).

A more recent approach developed at the Joint Research Center (JRC) of the European Commission goes one step further by presenting a set of indicators taking into account the more dynamic and interlinked character of 'science-for-policy ecosystems' (Pedersen, 2023). Ethics-policy advisory ecosystems also need what Oliver (2022, p. 9) terms 'absorptive capacity' – 'the ability and resource available to enable decision-makers to seek, assemble, and fully comprehend the strengths, weaknesses, and key implications from evidence'. However, in an ecosystem of ethics advice, they are not dealing solely with evidence, and as such they also need specific adaptive capacity through which to navigate specifically ethical forms of public reasoning in the context of a plural range of legitimate worldviews and knowledge uncertainties.

Meanwhile, there is a long tradition in STS and in research on science communication to enhance public dialogue and develop more reflexive scientific institutions which conduct or represent scientific communities or provide advice to governments

(Cunningham-Burley, 2006, p. 204). At the same time, it has been argued that STS scholars have tended to exaggerate the value of participatory processes in a context in which the most crucial decisions, political-economic interests of scientific elites and problem framings have already been made (Wynne, 2007). This has served to hold public participation and ethics at a distance from science (Smallman, 2019). These issues highlight the high stakes at play within ethics-policy advisory ecosystems – how they are set up, their composition and processes are key to understanding whether they will be effective or successful in supporting public forms of reasoning, providing normative judgments and preventing unethical policies and practices.

Bringing together these different strands of literature with our findings on ethics expertise, we identified three core capacities in ecosystems of ethics advice: (a) the capacity to coordinate and align multiple governance levels and value systems (operative capacity); (b) the capacity to integrate a plurality of modes of ethics expertise into public reasoning (discursive capacity); and finally (c) preparedness for uncertain futures through developing institutional resources for ethics strategies before, during and after crisis and critical moments (adaptive capacity). In the following, we discuss the core capacities set out in our framework and illustrate them by drawing on findings from ethics-policy advisory systems.

## Comparative analysis of national ethics capacities

### *Governance cultures: operative capacity*

#### *Multi-level scales of governance*

Complex ecosystems of national ethics-policy advice, such as that found in the UK but also partly in Germany, have previously been found to be *adhocratic* (Pykett et al., 2023; Sommer et al., 2024), *informal* and *transient* (Wilson et al., 2024) in their forms of governance, composition, remit, influence, public engagement and decision-making powers. These are dispersed institutional infrastructures, characterised by a degree of self-organisation and an ‘ordered chaos’ (Aguerre et al., 2024). This makes researching the norms and decision-making practices in each country all the more relevant to address the current lack of empirical accounts of how ethics advice is organised nationally, how effective this is, and how ethics expertise interacts with and differs from scientific expertise. It also underscores the highly dynamic and often situational character of ecosystems of ethics-policy advice. Consideration of these characteristics of self-organisation, polycentricity, norms, decision-making practices and scales of authority can therefore be a useful starting point for comparing the operative capacity of ethics-policy advisory systems within democracies. These characteristics can have procedural impacts, including their readiness to provide effective ethics advice, which influences policies, helps polycentric decision-making bodies and diverse publics to navigate conflict, retain autonomy and independence from partisan political parties, and work across scales to anticipate, identify and analyse ethical issues from the personal to the global.

Multi-level forms of governance are somewhat evident in the UK, where several UK Government departments in Westminster, devolved administrations, local authorities, non-departmental public bodies and regulatory bodies convene their own ethics committees or employ ethics professionals. A number of academic, learned and scientific societies, as well as civil society organisations, professional associations and independent

public bodies provide ethics advice to policymakers and shape public discourse, including the *Nuffield Council on Bioethics* and the *Ada Lovelace Institute*.

From our interviews in the UK and Germany, we found that there were often collaborative relationships between institutions, with advisors often serving on several bodies, bodies working together or feeding information between committees (UK11, scientific advisor who served on an ethics committee; GER14, ethics advisor). Some had advised central government departments for which ministerial approval was required, as well as advising regional public bodies (UK6, ethics advisor). Others had worked for several years leading learned societies in public facing roles (UK11, scientific advisor who served on an ethics committee). Both civil servants and ethics advisors in the UK expressed scepticism about the way in which the ethics-policy advisory ecosystem had become too 'industrialized' (UK7, policy/regulatory body), generating 'a plethora of advisory bodies' (UK1, ethics advisor). The suggestion here was that it had therefore become challenging for policymakers to know best which institutions to approach for ethics advice, and that ethics advice was in danger of becoming performative rather than part of a genuine dialogue about the direction or potential consequences of a particular policy. Some felt this was becoming uncoordinated, 'an ecosystem with nobody in command' (UK4, ethics advisor), and proffering 'reductive' ethics checklists as products for policymakers (UK7, policy/regulatory body).

In Germany, the *Deutscher Ethikrat* (German Ethics Council) examines the ethical, societal and individual impacts of developments, especially in the life sciences. The wider ethics-policy advisory ecosystem in Germany includes independent institutions dedicated to giving ethics advice, such as independent science academies like the *Leopoldina* and government agencies for research and regulatory science, such as the *Robert Koch-Institute*. Moreover, there are a large number of federal state ethics committees associated with universities or professional medical associations across the country. Alliances of scientific organisations and science councils in all three nations also play a role in shaping the governance of research infrastructures and the relationships between science and society.

In the case of Australia, it is not possible to identify an overarching national definition of an ethics committee, since there is no single institution to set this agenda. Indeed, the Australian ethics-policy advisory ecosystem is less institutionally coherent. The *National Health and Medical Research Council* focusses on health research ethics, and there are various university-based research centres and learned societies on bioethics providing professional networks for knowledge exchange. Meanwhile, the *Australian Public Service Commission* promotes professional values, mandatory codes of conduct and institutional integrity standards.

There was some concern expressed by some interviewees where highly distributed and commercialised forms of governance seemed to challenge the independence of ethics advisory bodies, or appeared to threaten a sense of coordination. This could lead to a situation in which ethics advice becomes instrumentalised as a service for hire, buying in ethical legitimacy for a particular course of policy action. One interviewee described the commercialisation of ethics advice in Australia with some university-based ethics experts working through management consultancies, and a second interviewee talked about the current disconnection and fragmentation in the Australian ethics-policy advisory ecosystem:

Australia is big into tenders. We outsource heaps of government work and, depending on how proactive a university is, they can get themselves on the so-called panels for this work, which allows them to bid for pieces of work [...]. (AUS2, ethics advisor)

Meanwhile in Germany, the legislative status of the *Deutscher Ethikrat* was seen as important in co ordinating across governance systems:

It makes sense to establish such cross-connections so that the left hand knows what the right hand is doing, e.g. when the Ethics Council writes about big data and health at a high level of abstraction, and the Sachverständigenrat [Expert advisory council on the assessment of developments in the healthcare system and in nursing care (SVR)] then concretizes this in its report [using examples of practical implementation]. (GER21, ethics advice receiver/civil servant)

Here we see then three different perspectives on the pros and cons of governance across scales: in Germany a highly centralised and co-ordinated ecosystem which nonetheless involves a number of manifold ethics committees and bodies across the country; in the UK a dispersed network of formal ethics advisors linked closely with government departments, many of whom sit across multiple committees but in an ecosystem which risks duplication of effort; in Australia, a less formal and piecemeal situation in which ethics advisors are called on in an informal or ad-hoc way either through consultancy work or through their submissions to Senate Inquiries.

### *Bureaucratic cultures*

A second set of features of the governance culture of the ethics-policy advisory ecosystems relates to their membership and decision-making processes. Firstly, we find that policy professionals play an underacknowledged role in making ethics-informed decisions, whether or not these decisions are informed by any formal ethics expert, framework or institution. Civil servants in the UK, for instance, described the significant amounts of informal ethics work that they do, including identifying civil servants who had gained a professional reputation for making so-called reasonable decisions or demonstrating an ethical mindset. This is suggestive of the implicit nature of much ethical deliberation that is done in everyday policy work. In Germany, policy professionals pointed to the silo character of ministries as being an obstacle for both inter-departmental coordination on complex ethical issues and science-policy interaction. One of our interviewees suggested that there should be more institutional 'bridgeheads' ensuring regular exchange and coordination (GER4, civil servant). In Australia, there was likewise often a focus on cultures of integrity within government departments, although there was a concern that ethical debates could be more academic than practical (AUS11, civil servant).

Secondly, interviewees sometimes reported a high degree of randomness in the appointment of ethics experts in the UK: 'My own experience is that this is mostly about accidental networking' (UK4, ethics advisor). Some members of ethics advisory committees described how they had been appointed through informal or professional social networks, or through existing relationships within a community of ethics advisors participating across multiple bodies (UK12, advisor; UK1, ethics advisor and UK4, ethics advisor). In Australia, one or two had been approached through their (university) institution or as a result of their contribution to media commentaries raising their public profile (AUS3, ethics advisor). By contrast, for other committees, interviewees had

applied through an open competition and transparent, formalised selection procedures (UK2, ethics advisors and UK12, advisor). For example, in Germany, of 26 members of the *Deutscher Ethikrat* half are nominated by the Bundesregierung (Federal Government), the other half by the Bundestag (Federal Parliament) for terms of 4 years, renewable once. The appointment structures in Germany reflect an intentional process to ensure the plural representation of different forms of (e.g. medical, legal, sociological, economic, theological) expertise, but they are otherwise regarded as highly dependent on existing networks as opposed to open competition.

In terms of the structures and process of internal decision-making, there was a high degree of variation between different kinds of ethics advisory bodies. Some described submitting multiple position statements to the commissioners of advice after a period of robust discussion which did not result in agreement (AUS6, ethics advisor). Others described providing advice on possible consequences of particular courses of action but ultimately 'it was all being decided by the team [of civil servants] that was executing' (UK12, advisor).

### *Alignment with the political system*

The UK does not have one national ethics committee, but a combination of committees formally commissioned directly by government departments, and a number of specialist independent bodies. *Nuffield Council on Bioethics* is one such independent body, and its advice is non-binding. It is funded largely by philanthropic organisations (*Wellcome, Nuffield, Medical Research Council*). Its current (2024–2028) strategic mission includes embedding ethics in policy making, and as such it is active in policy engagement activities.<sup>2</sup> In Australia, there are alliances of institutions, e.g. *Australian Ethical Health Alliance*, which has its history in business ethics in the health industry.<sup>3</sup> Their focus is on consensus and best practices for ethics at the level of member organisations.

By contrast to these more informal processes of influence and agenda setting, the *Deutscher Ethikrat* has all its rules and procedures published on its website and has a statutory mandate to select topics, hold public events and publish opinions. Generally, its meetings are held in public and its minutes published. In particular, its decision-making protocols are not based on consensus, but rather they also publish minority opinions in cases where there is dissent within the *Deutscher Ethikrat*. Importantly, there is no stated commitment to action as a result of published opinions of the *Deutscher Ethikrat*. As has been noted before (Barth et al., 2020), they use both dissensus in ethical judgements and conflicts about statements as resources for public deliberation. This highlights the importance of ongoing research into how ethics advice is both organised, and ultimately used by political decision-makers. As one German civil servant told us 'So, of course, we are not obliged to follow the advice of the Ethics Council. We take note of it and evaluate it' (GER21, ethics advice receiver). This challenges the staunch criticisms made by media and civil society organisations regarding the politicisation of ethics which followed the establishment of the *National Ethikrat* in 2001 (since 2008: *Deutscher Ethikrat*) as a putative puppet of the German Chancellor. In fact, as Braun and Kropp (2010, p. 774) point out, its establishment heralded a new era in which formerly 'elitist, technical and positivist models' were replaced by new forms of 'institutional reflexivity'.

Overall, it is difficult to ascribe any one specific political regime, such as liberal or communitarian, to the vast and varied institutional composition and governance cultures of

these national ethics-policy advisory ecosystems. However, as Wilson et al. (2024, p. 217) point out, it is crucial to understand that the effectiveness and definition of good ethics advice are precisely determined by these institutional set-ups: the predetermined processes by which ethics advice is solicited and received. These processes could lead positively to better coordinated ethics advice from a wide range of stakeholders, or could, in fact, lead to what is termed ethics washing, whereby organisations performatively seek out ethics advice. One Australian advisor we interviewed had experienced public bodies 'just appointing you to rubber-stamp so they get that gold ethics star on their outcomes' (AUS2, ethics advisor). This was also the case in the UK, where one advisor warned of the risk of 'ethics shopping', where 'you go around to the ethics committees which you know' (UK11, scientific advisor who served on an ethics committee). This suggests that the formal independence of some kinds of ethics committees is a direct trade-off with their degree of influence, in the sense of changing a course of policy action.

### *Pluralisation of expertise: discursive capacity*

#### *Approach to public engagement*

Calls within STS for *democratisation* as distinct from *public engagement* (Eyal & Medvetz, 2023; Smallman, 2019; Wynne, 2007) are under-analysed in consideration of ethics-policy advisory ecosystems. Ethics advisors, for instance, noted the importance of a democratic orientation to scientific fact, and identified some of the challenges and contradictions between expert and public perspectives:

[Ethics advice] involves appeal to more than just facts, right? So ethics advice [...] Scientists [...] can tell policymakers about what scientific data we have, the degree of consensus about those data and [...] different expert opinions about those data. [...] But you can't decide what to do based on data alone. (AUS8, AI ethics advisor)

Questions for researchers to consider here include whether there are national differences in the way that the distinct and contrasting epistemic status of science and ethics knowledge is dealt with in ethics-policy advisory ecosystems. How are technical forms of knowledge navigated at the same time as rendering them meaningful to the extent that they come to matter to politics, people and publics? What publics are imagined and co-constructed at the science-ethics-policy advisory interface, and how do these shape policy decisions (Ballo et al., 2024)? What procedures are needed to ensure that participatory public engagement is driven by a democratic impulse in which forms of participation, claims to legitimate authority, and accountability are fair and publicly defensible? How far does and should public engagement in ethics involve diverse worldviews and belief systems? This is certainly on the minds of members of the *Deutscher Ethikrat*, who have urged researchers to build knowledge on how publics increasingly question 'elite discourses' such as that of the ethics council itself and to take more seriously people's fears of losing social status<sup>4</sup> (member of the *Deutscher Ethikrat*, Jan 2025).

#### *Forms and definitions of ethics expertise*

The discursive limits of ethics expertise are increasingly questioned. An influential bioethicist in the UK has recently called for the field to 'develop new models for engaging with the full complexity of moral disagreement in the context of pluralism' (Parker, 2026, p. 1).

This pluralism is evident from our interviewees, amongst whom there are a wide range of perspectives on what constitutes valid ethics knowledge. Some saw ethics advice as part of a wider recognition of the diversity of values informing world views, and the need for democratisation of policymaking:

the credibility lies in being able to make distinctions between different values that could matter in a particular context, laying those out for the democratic public or the policymaker or whatever and then kind of leaving it to them to decide what to do because hey, they're the ones who are democratically authorised. [AUS1, academic]

Boundaries between ethics and politics, ethics and regulation/law, ethics and rights, ethics and equity were seen by some interviewees as necessarily blurred, but by others as crucial lines to draw. This points to the increasing specialisation of ethics advice, for instance in relation to 'neuroethics', 'data ethics' or 'environmental ethics'. So too we observed a fragmentation of types of ethics expertise:

So, in my world, I've got two very distinct bunches. Well, three distinct bunches, I suppose. One bunch is more the [science] bunch. One bunch is more the social sciences [...] And the third bunch are academics that are hardcore, die-hard AI experts. And I promise you those three bunches of academics often have very little in common. (AUS5, civil servant)

Something important is lost in these processes of specialisation and fragmentation, where they reflect fundamental disagreement about what counts as an ethical question. Moreover, we came across scepticism and reluctance to call something ethics: 'I guess too, we often had conversations about what we didn't want to touch in an ethical sense' (AUS6, ethics advisor).

### *Deliberative practices and forms of reasoning*

Both amongst ethics advisors and those in policy commissioning such advice, there was, in general, a clear distinction made between ethical principles and ethics in practice. Values, principles and questions of equity, justice and fairness were seen as determined within the deliberative practices in which they are produced:

it is the age-old question of all ethics is what does good look like? What is the good ethical philosophy, what is the good life? What is the good action? What is the good intention? It's not a checklist. It's a deliberation around what the good looks like in this particular context. (UK7, civil servant/advice receiver)

Others described their role not in terms of knowledge, but in terms of the professional skills they brought in relation to conceptualisation, and making visible the value assumptions of experts and policymakers alike. They highlighted practices aimed at supporting transparent mechanisms through which to resolve conflicting perspectives:

[...] much of what we do is actually about conceptual clarification, adding in nuance, adding in complexity, unpacking things. So, sometimes we are seen as making things a bit stickier because we actually don't give a green flag or a red flag. We, instead, show some of the greater nuance that might be required [...]. (AUS2, ethics advisor)

These perspectives align with calls in the wider science-policy advice literature for 'maximally pluralistic' knowledge and transparency of 'epistemic preferences' (Bschor & Lohse, 2024, p. 553). Jasanoff's (2005, p. 249) comparative framework of 'civic epistemologies' is also useful here for providing an assessment of the dynamic processes of relating public

reasoning with historically and politically specific ‘cultural expectations about how knowledge should be made authoritative’. Likewise, Straßheim (2024, p. 1) highlights the mechanisms by which ‘evidence cultures’ are produced as ‘discursive and institutional forces (re-) producing the scientific validation of knowledge and its relevance to policy making’. These insights are yet to be applied to the specific institutional and discursive specificities of ethics knowledge. In particular, we take from these conceptualisations a focus on ‘preferred registers of objectivity’ by which public knowledge is taken to be reliable and unbiased, and which Jasanoff (2005, p. 267) argues are characterised by a ‘consultative’ register involving independent experts in the UK, and a ‘negotiated’ register involving all affected interest groups in Germany. Australia has a Westminster system that blends strong technocratic expertise (disciplinary objectivity) with democratic accountability (regulatory objectivity). Its federalism requires a degree of negotiation between jurisdictions for issues that span the national/state boundaries. As such, we suggest that it is important to pay attention to the longer historical trajectory involved in the establishment of particular civic epistemologies, re-production of scientific validation and evidence cultures.

Our research also shows, however, that these larger structural assessments and typologies tend to overlook the differences and conflicting positions within each of the systems. For example, it is true that the *Deutscher Ethikrat* maps the ‘the macrocosm of society onto the microcosm of committee structure’ (Jasanoff 2011, p. 32). But it distinctly deviates from the overall image of Germany’s ‘consensus-seeking’ style (Jasanoff 2005, p. 259) by publicly exposing the different ethical principles held by its members. As one ethics advisor recounted:

is it better to highlight the dissent and at least explain the reasons that lead to dissent? That’s what happened with the vaccination opinion [from the *Deutscher Ethikrat*], [...] where it was absolutely clear: we don’t have a consensus anyway. (GER24, ethics advisor)

We turn now to some of the other temporal dynamics involved in these processes of making ethical moments in circumstances of uncertainty, crisis and continual change.

### ***Uncertainty and temporalities: adaptive capacity***

#### ***Orientation to uncertain knowledge and futures***

National ethics-policy advisory ecosystems require new ways to navigate, evaluate and act according to diverging public values, and an increased public critique of scientific institutions and knowledge hierarchies. They need to be responsive and well-connected to the apparatus of policy decision-making and existing advisory processes in order to navigate knowledge claims well. The impacts of not properly making visible and dealing with ethical issues in times of uncertainty, polarisation and crisis were expressed by one ethics advisor in Australia:

I kind of think the idea of following the science in public policy is always confused. Early on in the pandemic, we were following the science plus a value claim that said, ‘We’re going to avoid deaths at the cost of the economy,’ [...] and we all kind of went along with [that] but we should have acknowledged it as an ethical claim at the time. And [...] two years later, we were kind of paying the price for that in terms of the politics that arose and the backlash to the long lockdowns in Western Australia. (AUS1, ethics advisor)

### *Crisis situations and ethical moments*

Meanwhile, in Germany, what one interviewee described explicitly as a long-term ‘deontological approach’ was adopted to the determination of issues to be considered and deliberated by the *Ethikrat*. While some of their formal production of Opinions was solicited directly by the federal parliament, others were decided by a rotating system of plural forms of expertise, such that:

Since the members rotate regularly, one could also say that over time a broader spectrum of critical topics is covered because it is hoped that each new member will bring a new sensitivity to ethical issues to the Ethics Council. It’s similar at the Leopoldina, [when working groups on topics are formed] [...] is not top-down, but bottom-up [...]. (GER14, ethics advisor)

Another German ethics advisor also described that the national advisory system tended to be responsive rather than proactive, and we did not find any concerted evidence of the kinds of foresight practices that have been pursued in the UK context:

That’s why the question is of course also: What are the moments in which things are perceived as ethically relevant, and I think these are always crisis experiences. And that’s why, I think, something like medicine, as a reaction to crimes committed by doctors, i.e. medical ethics, not only, but above all, as a reaction to crimes committed by doctors in the Third Reich, but also elsewhere, i.e. in different contexts. Then the whole environmental ethics, technology ethics as a reaction to nuclear energy, as a reaction to genetic engineering, and the like. So, I think it always takes a bit of a shock moment before something is perceived as ethically relevant. (GER24, ethics advisor)

### *Ethical preparedness*

A third important temporal feature of ethics-policy advisory ecosystems is the way in which advisors and advisory bodies themselves engage with multiple pasts, present and futures. Crisis situations exhibit different temporalities, ranging from urgent to creeping, systematic crises. Ecosystems of ethics advice therefore require a capacity to be adaptive to uncertain futures. These betray a range of practical considerations regarding preparedness, foresight, responsiveness, adaptive capacity, policy-readiness, embedding of ethics expertise, the long-term sustainability of institutional configurations and the legacy of existing inequalities (Archard, 2022). Such temporalities can also confer distinct epistemological orientations to value deliberation, value setting, value judgment, political and existential significance.

Ethical preparedness refers mainly to the need for skills, training and ethics guidelines/frameworks to inform decision-making. Gaps have also been identified, such as a lack of transparent ethical reasoning and justification behind these frameworks (Smith & Silva, 2015), or a lack of opportunity and motivation for individuals to behave according to the imperative of ethical preparedness (Samuel & Lucivero, 2022). For example, in their study of the Ethics Advisory Board for the development of the UK’s NHSX Covid-19 contact tracing app, Samuel et al. (Samuel & Lucivero, 2022, p. 7) found that ‘ethical deliberation was not embedded into the day-to-day decision-making of app development’. This meant that notwithstanding the responsive assembly of an *ad hoc* ethics board for this specific purpose, the opportunity to actually shape policy decision-making and for advice to be listened to or acted upon was missing. This highlights a need for better understandings of institutional preparedness, organisational setups and governance cultures of ethics-policy advisory ecosystems.

By paying attention to institutional rather than individual ethical preparedness, we can begin to ask questions about *institutional skills, ethical and policy capabilities, institutional memory, adaptive capacity* and *embedding* ethics advice directly in government ministries and departments. This focus has the potential to ensure that future ethics-policy advisory ecosystems have the necessary processes and capabilities in place to turn ethics knowledge into realisable goals and action plans. It will help them to support deliberative ethical practices and to learn from history as well as to engage in foresight methods across the full policy design cycle. As one UK advisor who served on a policy body on data ethics highlighted:

you're not going to get the championing unless people have felt engaged in the horizon scanning in the first place and that to me was going to be the big challenge in the new structure. How do you bridge between horizon scan and operationalization. (UK12, advisor)

Considering the structures and everyday practices needed for building institutional knowledge capabilities and reflexive capacity in this way is necessary to 'close the loop between anticipation and action' (Aicardi et al., 2018, p. 115). At the same time, caution needs to be taken not to propose ethics-policy advisory ecosystems which provide ethics as a service, used to curtail public ethical reasoning or just speed up decision-making processes. An obvious counterstrategy is to embed ethicists within government departments. Yet some interviewees highlighted concerns that embedding ethicists had become harder in the context of Australia (similar observations are frequently made about the UK), precisely because of the decline in institutional capacity with the civil service:

And that is a space that there is now a new political agenda to reclaim that expertise within government, to have their in-house consulting to regrow all the stuff that they, kind of, deliberately hollowed out in previous years. So I feel like, I think, I often felt like I was shouting into the void there. (AUS12, social science advisor to government)

## Conclusion

As an institutional form, national bioethics committees emerged from war, violence and exploitation – people in positions of trust doing unthinkable social harms. They are concerned with making visible for ethical scrutiny that which is yet unthinkable, uncertain and often unknown. Ethics bodies are about the deliberative practices of making the unthinkable sayable, and bringing into public discourse modes of reasoning and justification which align with the democratic standards of their specific context. Effective ethics-policy advisory systems are needed now more than ever because of the persistent realities of global conflict, global health inequalities, under-regulated rapid innovations in (bio)technologies, public mistrust of expertise and evidence, and the co-option of modes of critique by the far-right. With increasingly fragmented forms of ethics expertise, and with vested interests such as global Big Tech corporations now commonly influencing ethics research, civil society organisations and scientific institutions (Bown, 2024), we must pay special attention to who counts as or who becomes an ethics expert, and who controls the ethics narratives on such major global issues such as the regulation and use of AI or future planetary health.

In this paper, we have applied debates on the changing and contested nature of the expertise science-policy interface and the role of participatory publics, as well as literature

on policy advisory systems and policy capacities to primary interviews with ethics advisors and policymakers. Through this process, we have developed a novel analytical framework to advance comparative international research. This sheds light on the critical factors that may shape whether ecosystems of ethics advice can succeed in meeting global challenges. The role of values and normative principles is institutionally, personally and practically less explicit in the production and communication of science knowledge than it is within ethical knowledge, which marks out ethics-advisory ecosystems as distinctive phenomena with their own organisational characteristics, capacities and challenges.

There is of course overlap between the factors and capacities we have identified, and we invite others to refine, use and adapt them. We hope that they provide a detailed guide for advancing understanding of the dynamic and fluid constitution of ethics-policy advisory ecosystems. They are offered as starting criteria from which to evaluate how well these ecosystems of ethics advice serve public goods, democratisation and good governance (Table 1). These criteria can help to discern what forms of impact (for example: symbolic, procedural, deliberative, instrumental, anticipatory) ethics-policy advisory ecosystems can have, as a basis for improving their future capacities.

We draw three main conclusions from developing this basis for comparative analysis. First, given the historical importance of national ethics committees, our future ethics-policy advisory ecosystems need to evolve to accommodate major societal challenges, such as increasing concentrations of power and capital, and growing polarisation of belief systems and values. As we have explored here, significant issues must be resolved concerning what works best with regard to the independence and/or embeddedness of ethics experts, institutions and processes in government and policy making. The capacity of policy professionals to learn reflexively about different conceptualisations of ethics and to build institutional capacity in convening pluralistic communities of ethics experts also needs to be enhanced. The first part of our analytic framework on governance cultures is intended as an entry point for identifying what is lost or gained in the involvement of different authority structures, different types of advice providers, and different forms of governance of ethics-policy advisory ecosystems. It should also prompt further analysis of the political-economic contexts in which ethics advice is situated, and how that impacts how ethics is defined, and the scope of ethical challenge, scrutiny and influence provided by ethics bodies.

Secondly, a related set of concerns around both democratising and pluralising ethics expertise emerges from these same circumstances. We have argued that STS scholarship has been useful in questioning assumptions about the science-technology-policy relationship and should now deploy its conceptual tools to the particular epistemological status of ethics knowledge claims in a post-truth era. Having successfully problematised the construction of scientific facts, more focus now needs to be paid to how to understand nationally and culturally-specific forms of public reasoning. By engaging in further dialogue with scholarship on policy advisory systems, STS can provide specific insights on how ethics-policy advisory ecosystems should respond both to the growing public distrust in science and scientific mistrust of the public. We argue that research should therefore critically evaluate the key features and practices of public engagement and who counts as an ethics expert in light of strong concerns about the status of scientific facts. We suggest drawing clear conceptual distinctions between public engagement, public forms of reasoning and democratic involvement in policy-decision making.

Furthermore, we concur with others (Eyal & Medvetz, 2023; Wynne, 2007, p. 104) that insufficient research attention has been paid to the role of media and social media in shaping cultures of ethics expertise, determining what is sayable, in mobilising interest of – alignment, alliances, mobilisation of movements, and the influence of what Wynne terms ‘uninvited’ kinds of public participation in science, technology and ethical debate.

A third, methodological conclusion is that nested cases are a necessary addition to comparative analysis of ethics-policy advisory systems across a range of scales. Applying the framework to large scale complex national ecosystems involves a trade-off between evidence, detail and generalisability. It is not possible to straightforwardly name the public ethics regime of any one country, given the wide range and complexity of ethics bodies which make up their ecosystems. Instead, as Smallman (2022) highlights, a multi-scalar analysis is needed to avoid overly individualised accounts of ethics advice to governments. What matters is the endeavour to explain and exemplify why and how key characteristics such as governance cultures, public participation, and temporalities influence how issues become designated as ethical, and the quality, effectiveness and impacts of ethics-policy advisory ecosystems.

New forms of governance, learning, authority structures and multi-scalar thinking are all key ingredients of considering how ecosystems of ethics advice can become more adaptive (Camacho, 2023). This will involve not only re-thinking the nature of critique at a conceptual level, but also practically offering future proposals for building operative, discursive and adaptive capacities, which are necessary to enhance robust and democratic governance of ethical forms of knowledge that can simultaneously learn from the past, anticipate the future, and respond rapidly to urgent crises.

## Notes

1. <https://ethics.org.au/the-ethics-institute-helping-australia-realise-its-full-potential/> (accessed 27 November 2024).
2. <https://www.nuffieldbioethics.org/our-approach/strategy-and-impact/> (accessed 3 December 2024).
3. <https://www.ethicalhealth.org.au/history-1> (accessed 3 December 2024).
4. Closing Remarks, Public Part of the Plenary Session. Selection of Topics for Statements, Deutscher Ethikrat, 23 January 2025, <https://www.ethikrat.org/veranstaltungen/sitzungen/themenauswahl-fuer-stellungnahmen/#c4953> (accessed 17 March 2025).

## Acknowledgements

We are grateful to our research participants for sharing time and knowledge. We thank previous project team members, Lars Wenzel, Rene Rejon and Tom Lingard. We thank our project advisory board members, and Barbara Prainsack and John Coggon for specific feedback on this paper. Thanks to EASST 2024 session conveners: Silke Beck, David Demortain and Fiona Kinniburgh for an opportunity to present the paper.

## Disclosure statement

Nuffield Council on Bioethics (UK), is a Co-Investigator on the project, and one of the research team members (Marija Antanavičiūtė) was on secondment to this organisation from October 2024 to September 2025. The views expressed in this paper are the authors’ own.

## Funding

We gratefully acknowledge funding from the UK Economic and Social Research Council (ESRC) [grant number ES/X001091/1].

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## Ethics statement

University of Birmingham, UK: Humanities and Social Sciences Ethical Review Committee, approved #ERN\_23-0362, 8 June 2023. Written informed consent was given by all research participants.

## Data availability statement

Primary qualitative interview data (de-identified transcripts) will be deposited in a public data repository at the UK Data Service at the project completion.

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