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DISCUSSION NOTE

On Elephants and Octopuses: Two Models of Pluralistic Policy Advice

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Abstract

In this discussion note, we contrast two models of pluralistic policy advice that have recently been proposed: Stephen John's (2025) representative model and our integrative model (Bschir and Lohse 2022, 2024). We believe that the contrast between representative and integrative pluralism is of high relevance for the broader philosophical discussion on scientific policy advice.

In the article "Weber's Elefant: Rethinking Science Advice," Stephen John discusses the circumstances under which it can be rational for policymakers to act against *good* scientific policy advice. Using a recent case from the pandemic, John explains why policymakers were justified in rejecting the UK's Joint Committee on Vaccination and Immunization (JCVI) advice against COVID-19 vaccination of adolescents in 2021. While well-founded on the available evidence, the advice was, as John argues, one-sided: The committee approached the problem at hand solely from a medical point of view, i.e. it focused on *direct* health benefits of vaccination for adolescents while ignoring other relevant factors, such as the indirect positive effects of a lowered likelihood of having to self-isolate in case of an infection and the reduction of transmission dynamics in society. Further, the JCVI's policy advice was influenced by specific evaluative considerations on multiple levels: The framing of the problem was shaped by a normative assessment regarding the benefits that *should* be considered, and the judgment regarding the risk assessment was specifically guided by the "do no harm" principle of medical ethics.

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According to John, the UK's decision-makers, who did not act in accordance with the committee's advice, acted in a justifiable manner insofar as they weighed the normative aspects of the situation differently. Besides this, he makes another, more fundamental point. John asserts, and we agree, that normativity in policy advice is virtually unavoidable and that the received strategies to deal with this challenge—namely (a) aligning normative assumptions in policy advice with values that would be democratically endorsed, or (b) trying to make normative assumptions fully transparent—are unsatisfactory. The main reason for this is that there is "a deep tension between the claim that epistemic and ethical concerns are so intertwined that advice must be value-laden and the claim that we can simply replace ethical values in research without undermining epistemic authority" (John 2025, sec. 4). Epistemic choices often contain what John calls "as-if" value judgments—non-epistemic evaluative assumptions baked into practices and methods without explicit awareness. These assumptions are hard to identify and to separate from purely epistemic aspects in policy advice. Based on this assessment, John proposes "Weber's elephant" model of policy advice:

> "As in the ancient fable where multiple blind men each feel a different part of the same elephant, we should arrange our science advice around multiple groups of experts, each providing a partial perspective on the ethical-epistemic landscape. Note that, on my proposal, these scientists might do more than merely list relevant facts; [...] they actively make positive proposals, combining scientific, ethical, and political considerations." (John 2025, sec. 5)

According to this model, scientific policy advice should work in a way where a variety of different panels provide advice based on different factual and evaluative considerations. In the case of the COVID-19 pandemic, this would have meant to consider the advice of biomedical, social scientific, and other expert panels that each would have highlighted different aspects of a complex societal problem, including different normatively laden aspects (such as health and social participation, cf. Lohse and Canali 2021). The selling point of this model is that, while acknowledging unavoidable value influences in scientific policy advice, it does not aim at alignment or transparency of values. It suggests that the ultimate decision as to which perspectives with their corresponding values should be weighted higher than others is not a question of *integrating* the various perspectives, but a matter of prioritization and choice among different perspectives that are a priori equivalent. It leaves the *ultimate* prioritization of values to policymakers, thereby maintaining a core element of Max Weber's ideal of the division of labor between science and politics intact.

We would like to emphasize that we are highly sympathetic to John's proposal as it aligns in large parts with the notion of pluralism in science-informed policy, which we have proposed recently (Bschir and Lohse 2022, 2024), and which acknowledges both epistemic and value diversity as beneficial for policy advice. Our proposal shares the basic assumptions of John's account: Scientific advice is inherently value-laden and attempts to align science with public values often oversimplify the complex interplay between epistemic and non-epistemic elements in scientific reasoning.

However, despite major similarities, there is a subtle but important difference between the two approaches. The key difference to our notion of pluralism it that

John's model sees no need to integrate different perspectives on a policy-relevant issue. Rather, normative decisions should be deferred to policymakers and they are ultimately responsible for considering and choosing among different and possibly conflicting evaluative aspects in a responsible way. The difference between the two approaches can thus be coined in terms of a difference in the kind of pluralism that they put forward. While John advocates for a *representative* pluralism, in which all, or at least many, relevant perspectives and their respective evaluative components are presented in a representative fashion, we argue for *integrative* pluralism, in which the diverse perspectives are submitted to a process of epistemic and evaluative integration before they are passed on to policymakers.[1]

John considers the integration of different value-laden perspectives to be unpromising mainly for two interrelated reasons. First, there is the issue of epistemic incommensurability. Different scientific disciplines use different measures, techniques, and epistemic standards, which makes it extremely difficult and economically unfeasible to integrate different disciplinary perspectives in a policy advice panel (cf. Lari and Maki 2024). Second, and more crucial for John's overall argument, there is the concern that attempts at integration risk undermining an expert committee's epistemic competence (Koskinen and Mäki 2016, cited by John). If values are closely intertwined with epistemic practices and traditions, changing values with the goal to align them with commonly shared values could undermine the experts' epistemic authority, because changing values might amount to changing epistemic standards. While the first concern points at the practical difficulties of integrative pluralism, the second raises a deeper epistemic issue that arises from the intricate and often latent ways in which values enter and influence scientific practice and epistemic standards in different disciplines.

These concerns do indeed highlight important challenges of pluralism at the science–policy interface. Nevertheless, we believe that integrative pluralism is a better model for policy advice than the representative form of pluralism of the Weberian elephant model. In the remainder of this discussion note, we substantiate this claim with seven points.

(1) Our first point relates to the implicit realism of the elephant metaphor. John seems to assume that, although there may be different conflicting partial perspectives highlighting different aspects of a policy-relevant issue, it is clear what the issue is: it's about an elephant. However, the very nature of a policy problem is often not clear at all. This is especially the case for wicked problems (such as a global pandemic), where the problem itself is co-constituted by the very choice of problem-solving approaches (Rittel and Webber 1973). That is why value influences—in the form of value-laden epistemic choices—are so important to consider. The choice of methodologies and epistemic approaches (e.g., biomedical or social scientific) can influence problem framings in significant ways. One major problem with the elephant metaphor is that it simply assumes that the elephant exists in its specific form—that it is clear what it is that knowledge has to be produced about and what the different perspectives are supposed to uncover. In the case of wicked problems, the better (although still imperfect) metaphor is that of an octopus, which can take on very different shapes depending on the environment or context and in response to being

[1] Note that John does not himself qualify his pluralism as "representative". This terminology is ours.

perceived in a specific way (e.g., by a predator). Without an exchange between different perspectives on a complex problem—the flexible, polymorphic octopus—there is a risk that it will no longer be clear to what extent partial analyses from different (disciplinary) perspectives actually respond to the same problem.

(2) Our second point speaking in favor of integrative pluralism is that it incorporates a specific type of *integrative deliberation* as key component. Unlike existing models of pluralistic advice, in which divergent perspectives from one or several disciplines are considered side by side—each as an independent source of information so to speak—the integrative approach specifically aims to detect epistemic blind spots and limitations in each of the perspectives engaged in the deliberation and thus improve the epistemic robustness of problem analyses and proposed solutions. In the pandemic, this would have meant not only collecting recommendations from vaccination experts, public health experts, child psychologists, etc., but also questioning the very framing of the issue as (primarily) a public health crisis. Incorporating social scientific perspectives providing a radical alternative interpretation of what is going on would have been one way to achieve this.

This also has implications for science advising systems that respond to crafted charges (as, e.g., the National Academies in the US often do). In these systems, scientists are frequently confronted with the difficulty of reshaping these charges, when it turns out that the scope of the charges is unduly limited. Allowing advisory bodies to put problem framings up for discussion by showing that there exist alternative framings can be helpful to explain to commissioning agencies why certain charges are limited.[2]

(3) Integrative deliberation has another advantage: it helps to unearth and make articulable the implicit *value assumptions* that underly the epistemological affinities[3] of different scientific disciplines and approaches. John assumes "that we cannot easily 'read off' the non-epistemic values that shape scientists' claims." We agree. Uncovering implicit value assumptions is anything but easy. John nevertheless believes that we can use historical and sociological knowledge to establish at least coarse-grained links between disciplines and particular evaluative assumptions (e.g., between public health and the do-no-harm principle). It may be obvious that sociologists are more likely to address ethical implications of social inequality than biomedical experts. However, whether and to what extent epidemiological models contain implicit normative assumptions seems much less clear (Winsberg and Harvard 2022). These may at times be deeply entrenched in the disciplinary tradition and can be largely opaque to the scientists providing recommendations—as well as to policymakers receiving these recommendations. For example, a theoretical epidemiologist, who is mainly interested in building computer models and producing accurate predictions in an unfolding epidemic, and who puts a major focus on the

[2] An example of a crafted charge to the U.S. National Academies occurred in a 2021 contract with the Environmental Protection Agency (EPA). An independent review noted that the contract task was "unduly narrow" and that "the opportunity for NAS, stakeholders, or the public to provide feedback on this scope" was limited (American Chemistry Council 2022).

[3] The term "epistemological affinities" is used by Naomi Oreskes (1999, 2008) to refer to the epistemic, cultural, and social considerations that influence scientists' judgments and practices, which are latent sources of value-laden epistemic differences in scientific controversies.

number of susceptible, infected, or recovered individuals and on parameters like the basic reproduction number, will probably be better able to understand that their perspective is highly limited when it comes to understanding the clinical implications of the pandemic (e.g., differential treatment for different age groups, effects on health care resources, requirements for specific equipment for ICUs, etc.) when confronted with the perspective of a clinician.

Bringing different perspectives and approaches into an integrative deliberation increases the chance that latent values become visible—and open to discussion—through the contrasting and uncovering of epistemological affinities and implicit assumptions. Integrative pluralism thus raises the awareness of scientists and policymakers for hidden as-if value judgments, even if full value transparency may be impossible to achieve. (This corrective epistemic function of pluralism in science is an important feature of Paul Feyerabend's pluralism, to whom we refer in our proposal of pluralistic policy advice; see Bschir and Lohse (2022).)

(4) Because the deliberative process is internal and mainly directed at uncovering limitations and blind spots of each of the involved perspectives, their epistemic authority need not be undermined—one of the main reasons why John rejects integrative pluralism. The integration of perspectives need not lead to a lowering of scientific standards. Quite the contrary. Unearthing the epistemic limitations of the individual perspectives can help avoid a myopic picture that would result if only one or just a few disciplinary viewpoints were to dominate problem framings and policy advice, and thus increases the epistemic robustness of the resulting advice. Ultimately, integrative exchange leads to a better mutual understanding between the involved perspectives and to a better self-awareness of the limitations of each perspective.

The aim of integrative pluralism is *not* to derive a unanimous recommendation from the different perspectives based on an alignment with commonly shared values[4]—this would indeed risk producing an epistemically flawed pseudo-consensus, as John rightly points out. Rather, the goal is to propose a variety of scenario-based recommendations to decision-makers, each with different value prioritizations (Carrier 2022), say one prioritizing individual health risks and one the societal costs of prolonged lockdown regimes. This can result in a change in the communication of policy advice. Recommendations would (ideally) no longer contain just one recommendation and, where applicable, minority opinions, but rather a report that reflects different perspectives and values in the form of two or more recommendation scenarios. It is worth pointing out that displaying different policy options and offering multiple policy pathways is by no means unique to our approach and in line with existing accounts of policy advice such as Pielke (2012) or Edenhofer and Kowarsch (2015), which both put strong emphasis on neutrality and the expansion of the scope of choice for policymakers. However, we do share the concerns raised by Havstad and Brown (2017) concerning the deferral of value-laden decisions to policymakers.[5] Our integrative approach may well address

[4] Although alignment is not a goal, deliberation between different viewpoints may nevertheless lead to more balanced recommendations. This certainly applies to decisions that are not strictly either/or.

[5] Havstad and Brown (2017) reject what they call the "deferred-decision response" to the argument from inductive risk implicit in Edenhofer and Kowarsch (2015) and Pielke (2012). This response

these concerns, as it internalizes value-laden decisions and deliberations without becoming policy prescriptive. In the integrative model, the final decision on the course of action remains with policymakers, but not all value-laden decisions underlying the recommendation are deferred to the latter.

(5) The integrative model is less likely to overwhelm policymakers. It does not confront them with a multitude of recommendations that are juxtaposed alongside each other without contextualization, weighing of evidential status, or disclosure of their value basis. Rather, it offers a range of policy options that reflect a breadth of salient normative perspectives.

(6) John acknowledges what he calls the "common-ground objection" to Weber's elephant model, i.e., the problem that a multitude of conflicting proposals makes scientific policy advice seem like a chaotic cacophony. We see this as a more serious problem than John. Scientific policy advice can become arbitrary, especially when experts with the same disciplinary background make conflicting proposals because they argue from a different normative stance. When publicly visible, this can lead to further distrust in science and cast serious doubt on the rationality of independent policy advice. It may also contribute to polarization of public discourse in certain cases (including, but certainly not limited to, vaccinating adolescents). By channeling controversies into the internal deliberation of a pluralistic panel, the integrative model does not solve, but mitigates this problem (cf. Popa 2025). At the same time, the model does not gloss over expert dissent, which is reflected in the development of *different* policy options.

(7) The integrative approach limits the risk of cherry-picking or policy-based evidence selection. While this challenge to the rationality of policy advice is unavoidable, we may go beyond just conceding it (as John does). The integrative model precisely enforces a weighing and critical filtering of epistemic claims, which are then bundled into specific policy options (with different value prioritizations). This reduces the risk of selecting a limited range of evidence or of strongly one-sided normative decisions due to such a selection.

In summary, integrative pluralism offers a viable model for policy advice that combines diversity of perspectives with a pragmatic stance. Is the integrative model of pluralistic policy advice pragmatically challenging and resource intensive? Yes, but it is not unviable. We have discussed ways to mitigate key challenges (Bschir and Lohse 2024). These include the iterative recruitment of inter-/transdisciplinary-competent experts in policy advice panels, knowledge synthesis frameworks that are jointly constructed in the respective panels (in order to do justice to problem context and the diversity of epistemological affinities), and the prioritization of selected policy scenarios (see our paper for more detail). We believe that the integrative model for policy advice is not only preferable on normative and epistemic grounds but that it is also practically feasible.

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acknowledges the value-ladenness of decisions at the internal stages of science while attempting to take those value-laden decisions out of the hands of scientists. We agree with Havstad and Brown's claim that "[s]cientific practice necessarily incorporates a complex series of judgments whose complete deferral is unattainable" and that "the technical complexity of many of those decisions makes the elimination of expert judgment impractical and undesirable" (Havstad and Brown 2017, 102).

Concluding remarks

Pluralism is becoming increasingly important in discussions about science-based policy. The benefits of integrating and combining a variety of perspectives when dealing with complex real-world policy problems are widely acknowledged. Pluralism is also providing us with a more promising approach to manage inevitable value influences in this context. However, there are divergent ideas about how pluralism can or should be implemented at the interface between science and politics. This is also evident in practice, where different advisory systems coexist. Taking the COVID-19 pandemic as an example again, there have been systems that are closer to our model (e.g., interdisciplinary policy advice from the Scientific Council for Government Policy in the Netherlands) or to John's model (e.g., separate ad hoc policy advice from scientists from different disciplines), as well as systems that lie between these two (e.g., policy briefings by the German National Academy of Sciences, in which different points of view were presented side by side but not integrated).[6] In this note, we propose to distinguish between a representative and an integrative model for pluralism and discuss the implication of each model for questions concerning value transparency and neutrality. This can serve as a heuristic for thinking about different policy advisory systems—but it is only a first step. In our opinion, much remains to be done to analyze and work out various models of pluralistic policy advice in greater detail and, above all, to demonstrate their respective advantages and disadvantages and relevance for the practice of policy advice. Philosophers of science can play a central role in this.

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[6] See https://english.wrr.nl/publications/publications/2021/11/16/navigating-and-anticipating-in-uncertain-times and https://www.leopoldina.org/en/press-1/news/ad-hoc-statement-coronavirus-pandemic/ [accessed 02 July 2025].

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