21

Policy Relevance and Neutrality

MARTIN MAHONY

Overview

This chapter reviews the history of the efforts of the Intergovernmental Panel on Climate Change (IPCC) to achieve and maintain policy relevance while remaining policy-neutral and staying far away from 'policy prescriptiveness'. The chapter argues that the boundaries between policy relevance, neutrality and prescriptiveness are a practical achievement – they must be constantly negotiated as the science and politics of climate change evolve. The chapter uses historical case studies to illustrate this point, such as the controversy over the so-called 'burning embers' diagram. It ends by discussing recent debates about the IPCC's new role in the post-Paris Agreement policy landscape. While IPCC actors call for greater policy relevance, observers and critics contend that the IPCC will always and inevitably be policy-prescriptive, even if on a tacit and unintentional level. Achieving even greater policy relevance may therefore mean jettisoning or modifying the aspiration to be policy-neutral.

21.1 Introduction

> Because of its scientific and intergovernmental nature, the IPCC embodies a unique opportunity to provide rigorous and balanced scientific information to decision makers. By endorsing the IPCC reports, governments acknowledge the authority of their scientific content. The work of the organisation is therefore policy-relevant and yet policy-neutral, never policy-prescriptive.
>
> — IPCC (2013b)

For anyone with an interest in the history of scientific objectivity, authority and science-politics relations, there's a lot going on in the above self-description of the IPCC's status and *modus operandi*. The institution is both *scientific* and

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governmental by nature, concerned both with understanding the world and with governing it, and thus must presumably negotiate the occasional contradictions of those natures. The scientific information it offers is both *rigorous* – it offers the very highest quality of analysis – and *balanced* – it accounts for various interpretations and arguments, some of which presumably will be less rigorous than others. And the process of governmental *endorsement* is a performative demonstration of states' deferment to scientific expertise in offering the most *authoritative* description of the world under climate change, even where those descriptions may have profound implications that run contrary to some states' self-interests.

All these sources of potential tension lay behind the IPCC's oft-quoted mantra of being policy-relevant but policy-neutral, never policy-prescriptive. The IPCC offers a science that describes and predicts potential policy problems, and that increasingly evaluates the impacts of different policy options. But it offers a science that is neutral when it comes to political choice. The IPCC won't tell you what to do, just that something needs to be done, and that there is a range of possible things that you might do (Havstad & Brown, 2017). But working at these many interlinking boundaries – between description and prescription, knowing and governing, rigour and balance, scientific authoritativeness and real-world relevance – is neither easy nor straightforward. Indeed, the policing of these boundaries is arguably a defining feature of all the various disputes and controversies that have punctuated the IPCC's history to date (see **Chapter 16**).

This chapter reviews and summarises studies of the IPCC's efforts to navigate the relevance/neutrality boundary. Most of this research is informed by science and technology studies (STS), a field which largely offers its own consensus that science and politics (or policy) cannot be neatly separated and that values, norms and interests structure scientific work in similar ways to how they shape political decision-making. STS scholars would therefore conclude that defining a science–policy boundary is a *practical* achievement – something which must be continually worked at, as situations and contexts change.

21.2 Beyond 'Truth to Power': Fashioning Policy Relevance

From the outset, the IPCC moved beyond a model of science–policy interaction by which an autonomous science 'speaks truth' to a separate, political domain of 'power' (see **Chapter 2**). The IPCC has, since its founding, created and operated within a uniquely 'hybrid' space of science and policy, where problem framings, the selection of relevant questions and foci, modes of assessing reliability (**Chapter 11**), expressing uncertainty (**Chapter 17**) and communicating findings (**Chapters 25** and **26**) have been the product of negotiation between scientists and policymakers (**Chapters 9** and **20**). Although much copied since, the IPCC

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was for many years unique in following this hybrid model in producing regular global environmental assessments. But the nature of this hybridity has changed over time.

Over its first assessment cycle (1988–1990), this science–policy hybridity was particularly intense, and the IPCC was essentially *the* global setting for negotiating both the science and politics of climate change. In the First Assessment Report (AR1), Working Group III (WGIII) was a space for debating policy alternatives, whereas its next manifestation in 1995 became the more prosaically framed 'Economic and Social Dimensions of Climate Change'. Several developing countries expressed dissatisfaction at the first report's ambiguous positioning at the science–policy boundary, and were wary of the IPCC, with its numerical dominance of participants from the global North (see **Chapter 7**), becoming the chief setting where a climate policy architecture would be worked out (Miller, 2009). The Intergovernmental Negotiating Committee (INC) was therefore established in 1990, and was the institutional setting for the drafting of the UN Framework Convention on Climate Change (UNFCCC) (Bodansky, 2001). This act of boundary making subsequently strengthened the IPCC's self-identification as a scientific body, with a clear 'firewall' established between policy relevance and policy neutrality.

Beginning with the Second Assessment Report (AR2), new modes of fostering policy relevance were developed. Government representatives took on a larger role in the review process, and the processes for producing a Synthesis Report (SYR) and Summary for Policymakers (SPM) were formalised (see **Chapter 3**). The SYR offered an interdisciplinary, policy-relevant synthesis of the three WG reports and, Shaw (2005) contends, acted as a firewall between the science-facing WG chapters and the more policy-oriented SPM. Parts of the assessment process were increasingly pointed towards the requirements of the COP – such as Article 2 of the UNFCCC and the definition of dangerous anthropogenic interference (DAI) with the climate system (Oppenheimer & Petsonk, 2005). In the AR3 report (2001), attempts were made to further enhance the policy relevance of the SYR by including a number of 'policy-relevant scientific questions' (PRSQs). The intention was to draw policymakers not just into the review and approval of the provisioned information, but into the process of framing the very questions addressed. But as Shaw (2005) reports, the process of defining the PRSQs was fairly ad-hoc, involving just a select number of national governments.

This trajectory of the IPCC seeking to further increase the policy relevance of its assessment products, while strengthening both the internal and external boundaries between science and policy, has continued to date. It extends to the much-heralded 'solution-oriented' turn (Kowarsch & Jabbour, 2017) and to the increased regularity of 'special reports', some of which – like that on the implications of 1.5 °C of global

warming (SR15) – have been very directly mandated and framed by policymakers (Livingston & Rummukainen, 2020). Later in this chapter, we will return to these recent developments; what follows next is an exploration of how the pursuit of ever more policy relevance has always been accompanied by contestations and struggles over the boundaries of relevance, neutrality and prescriptiveness.

21.3 Policing the Boundaries

In the Third Assessment Report (AR3), a new way of visually engaging with the possible definition of DAI was developed by the authors of WGII, Chapter 19. The 'burning embers' diagram offered a visual depiction of authors' estimates of when different impacts would occur at different levels of temperature rise (for an example, see Figure 25.3 in **Chapter 25**). The blurred colours were intended to convey the inevitable uncertainties involved in aggregating already-uncertain knowledge about regional impacts to a global scale, and to convey the role that 'expert judgement' (see Mach et al., 2017) played in evaluating the significance and meaning of findings in the scientific literature.

The diagram was intended to be policy-relevant in the sense of furnishing policymakers with information by which they could come to their own judgements as to the meaning of DAI. Interviews with the diagram's creators revealed the complex, and not always consensual, intersection of epistemic, aesthetic and 'value' judgements.[1] Ultimately the diagram was designed to separate the primarily *epistemic* judgements of the authors from the subsequent *normative* judgements to be made by policymakers with the diagram's assistance. But this distinction was challenged in the review process, most notably by government representatives. A reviewer for the US government suggested that the implication that there was enough scientific evidence to inform a judgement of DAI was itself far too close to being policy-prescriptive, while other reviewers thought the diagram offered far too conservative a view of when dangerous impacts might begin. The subsequent AR4 version of this chapter met with similar issues. For a US reviewer, the whole thing was far too normative and prescriptive, even verging on the 'theological'. In contrast, for a German reviewer, the chapter needed to engage much more closely with the emerging political discourse around 2 °C as being an appropriate threshold of DAI, and thus serving as a policy target (Mahony, 2015). In the draft AR5 version of the burning embers figure, a much closer engagement with both 2 °C and 1.5 °C targets was proposed, but at the government plenary where approval was sought for the SPM, the 'UK, supported by Slovenia, proposed removing all dotted lines so as to appear scientifically neutral' (IISD, 2014: 12).

Throughout the history of the burning embers diagram, which has become 'a cornerstone of the IPCC assessments' (O'Neill et al., 2017: 28), the authors were

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praised by some for consistently acknowledging the role of 'value judgements'. For others, however, the presence of such judgements in any form ran counter to the IPCC's stated mission to be policy-neutral. For such critics, even venturing a possible definition of DAI constituted unwelcome policy prescriptiveness. These tussles can be interpreted as instances of 'boundary work' – the social processes whereby distinctions are drawn between science and non-science (Gieryn, 1999). Conventionally, 'boundary work' has been seen as something done by scientists to maintain their own intellectual authority and autonomy. In boundary organisations like the IPCC however, boundary work is something engaged in by both scientific and policy participants, in struggles to stabilise an ever-moving field of scientific and political facts and arguments, and to retain the respective autonomy of zones of scientific and political reasoning.

One lesson of the burning embers example – and of comparable cases discussed in **Chapter 24 –** is that different conceptions of where the science/policy (or relevant/neutral/prescriptive) boundary lies exist in different policy communities. In relation to the burning embers, Jasanoff's notion of civic epistemology can help interpret the wildly diverging views of different government representatives (see Chapter 23). Sociotechnical controversies in the United States and Germany, for example, reveal very different ideas about where science ends and politics begins (also Jasanoff, 2011b). The challenge for an international body like the IPCC is that there is no universally accepted definition of that distinction. The IPCC is a space where international actors engage in constant negotiation over how to bring science and policy together, and how to produce policy-relevant knowledge that does not stray into the realm of policy prescription. IPCC statements and representatives may allude to an apparently universal definition of where the boundaries lie. But the IPCC's history of practically managing science–policy interactions shows that drawing a line between science and policy, relevance and neutrality, is a product of negotiation within particular contexts. The line can never be settled once and for all, and more negotiation will always be required as contexts change.

21.4 Incredible Futures: From Relevance to Performativity?

The political world after the Paris Agreement of 2015 is very different: countries are busy deliberating their own Nationally Determined Contributions (NDCs) to the mitigation effort, as well as trying to think about adaptation at more local scales (see **Chapter 22**). Thus, the meaning of policy relevance for the IPCC is undergoing some quite radical changes (Lahn, 2018), and the intensification of mitigation debates has put the economics-heavy work of WGIII in the spotlight (Hughes & Paterson, 2017). WGIII participants have themselves become active

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participants in debates about the future of solution-oriented global environmental assessments (GEAs), most notably former WGIII Co-Chair Ottmar Edenhofer in his collaborations with philosopher Martin Kowarsch. They have argued that GEAs have a duty to provide much better knowledge of the implications and co-benefits of different policy choices, and to better accommodate diverse normative viewpoints. These authors say that the IPCC needs to reach out beyond conventional national government audiences to the diverse array of actors that make up the new landscape of polycentric climate governance. They contend that IPCC authors can work as 'map-makers' and 'cartographers of pathways', helping policymakers to think about different routes to intended policy outcomes – like keeping global warming to 1.5 °C or 2 °C – and to think through the interdependencies of policy goals, means and outcomes (Edenhofer & Kowarsch, 2015).

Edenhofer and Kowarsch's model recognises that maintaining policy relevance will require the IPCC – or at least parts of it – to engage more readily with thorny normative and political questions. They do not propose that the IPCC become 'policy-prescriptive', but rather that policy relevance be maintained through ever-closer engagement with the goals and values of policymakers and diverse stakeholders. Much of the earlier controversial work of the IPCC sought to help policymakers identify policy goals, such as not exceeding a point of DAI. Now, however, knowledge controversies are more likely to rage around pathways to pre-agreed policy outcomes (see **Chapter 15**).

Following the publication of AR5 several commentators criticised the inclusion of speculative 'negative emission technologies' (NETs) like bioenergy with carbon capture and storage (BECCS) in modelled pathways prepared for the assessments. For Oliver Geden, Kevin Anderson and others, this was evidence of the modelling community, which underpinned the work of WGIII, trying to keep policymakers engaged by telling them what they wanted to hear – that their targets were still achievable despite the continued lack of real mitigation effort (Anderson, 2015; Geden, 2015). By loading the models with *deus ex machina* technologies that would, at some point in the future, come along and save the day, policy goals could be retained while the means and outcomes of the pathways to them changed radically. For some, this represented an abnegation of scientific integrity; for others, the presence of speculative technologies in authoritative mitigation scenarios raised another prospect – that of the 'performativity' of scenarios and forecasts.

While the inclusion of high levels of BECCS may not have been an overt *prescription* by WGIII authors – i.e., a statement of 'this is what the world should do' – perhaps it could nonetheless become a self-fulfilling prophecy. Sociologists of science and technology have long observed that visions of the future can

become self-fulfilling by shaping what is deemed to be possible and desirable, by directing funding decisions, and lending an air of credibility to what otherwise might be considered speculation (Merton, 1948). Economic theory and forecasts have been noted to be particularly performative, with public policy used to shape markets and societies such that positive forecasts come true. The real world is increasingly shaped by the concepts and principles of mainstream economics, rather than the other way around. It is the supposed 'neutrality' of economics as a science that gives it the authority to exercise such world-making power (MacKenzie, 2006).

In the climate context, theoretical technologies like BECCS have, since 2015, increasingly been positioned in national policy scenarios and toolkits (e.g. National Grid, 2021). This seemingly bears out the idea that BECCS, as an illustrative possible means to a certain end in IPCC scenarios, has come to be seen as indispensable to achieving certain ends. It appears as a fully-fledged policy option under consideration by powerful actors, even if the technology may be unproven and lacking societal consent (Beck & Mahony, 2018b).

The inclusion of BECCS-heavy low-emission scenarios in AR5 was a laudable attempt to keep the possible 'solution space' for policymakers as open as possible, in line with the principles proposed by Edenhofer and Kowarsch (2015). However, Beck and Oomen (2021) argue that in pursuing its role as a 'map-maker', the IPCC has also functioned as a 'corridor-maker'. It has limited ideas of possible routes to predefined emissions goals to a series of consensually agreed and scientifically authoritative pathways. The concern is that in relying on technologies that can pass the economic sniff-tests of integrated assessment modelling, other, more radical policy options may be left off the table. Many are now asking how assessments like the IPCC can instead broaden the solution space in a way which goes beyond those solutions deemed feasible within economic models designed to tend towards global economic optimisation (Kear, 2016; Pielke Jr, 2018). What if, to deal with decarbonisation properly, the rules of mainstream economics, and of political and social feasibility, need rewriting? What would that mean for the IPCC?

The integrated assessment community is starting to explore scenarios that unsettle the assumption that economic growth should be a default policy goal (O'Neill et al., 2020). In assessing such scenarios the IPCC could further expand the possible solution space. But with economic growth being such a powerful default public policy (Barry, 2021), would this be to the detriment of policy relevance and credibility? By challenging – or at least questioning – some basic political-economic assumptions, the IPCC will inevitably attract criticism for being too normative or prescriptive, or maybe even 'theological'. But as the IPCC seeks policy relevance in a polycentric climate governance context, and as it aims to pivot from identifying the climate change problem to assessing solutions, it will

need to increasingly engage with thorny normative and political questions (Maas et al., 2021). Indeed, Noel Castree and colleagues recently called for a new mode of GEA that is openly political, offering 'visibility to a wide range of worldviews', particularly those which would challenge the base assumptions of other worldviews, such as the nature of power, what counts as valid argumentation, and the desirability of endless economic growth (Castree et al., 2021: 72). Remaining 'neutral' in such a context would be impossible – indeed remaining so would *itself* be an exercise of power, an unspoken backing for a certain way of thinking about and organising the world (Delvenne & Parotte, 2019).

21.5 Achievements and Challenges

The IPCC has often been accused by reviewers and critics of being 'too political' and 'alarmist', and of not sticking to a sober deliberation of scientific facts (Shaw & Robinson, 2004). Others have observed that the push for consensus and rigorous assessment has sometimes undermined the policy relevance of reports. For example, reflecting on the exclusion of more extreme, but highly uncertain, projections of future sea-level rise (SLR) from the AR4 WGI report, Oppenheimer et al. (2007) argued that the IPCC was doing policymakers a disservice (see Box 19.1). Surely those charged with governing coastlines and littoral cities would want to know about 'high-magnitude' potential events – like an SLR of 7 metres or more – no matter how unlikely the best models may currently say they might be (see also **Chapter 17**). In a later paper, Brysse et al. (2013) looked across a range of IPCC projections and argued that the knowledge-making structures and processes of the IPCC mean that the reports tend to 'err on the side of least drama'. Avoiding scientific and political 'hot potatoes', in a bid to preserve scientific credibility and authority, means that information that may be highly relevant to policymakers can be excluded because of its uncertain or controversial nature. As the IPCC strives towards ever more policy relevance, it runs up not only against its own policy of remaining neutral, but also against its other practices for maintaining credibility and authority, such as consensus-seeking (see **Chapter 19**).

The distinction between policy relevance and neutrality may seem straightforward in theory, but it is something that must be worked out continuously in practice. Stabilising the boundary between science and policy is always a practical, context-bound achievement – a product of ongoing negotiations between IPCC authors, reviewers and government representatives. The IPCC can claim some success in stabilising this boundary sufficiently over time such that its reports continue to be considered a scientific gold standard as well as having demonstrable policy impact. But the IPCC and the communities that constitute it will need to reflect on the new political context of climate change, and on the challenge of the

relevance and neutrality of IPCC reports being in more direct tension as the organisation pivots towards a more solution-oriented and risk-management framing of its assessments (see **Chapter 18**).

Rather than simply seeking relevance to policy and policymakers, perhaps the IPCC should take as a guiding mantra the enlargement of the solution space, for example through engaging with a wider range of scenarios of, and pathways to, global sustainability (O'Neill et al., 2020). Through this and other means the IPCC could build relevance with diverse stakeholders and publics, while helpfully laying the foundations for informed democratic debates about the broad suite of policy options available for limiting the trajectory and impacts of global warming. The challenge here would be to reconcile new tensions between relevance and neutrality. Perhaps enlarging the scope of the former is worth the cost of jettisoning some of the latter.

Note

1 'We were looking at the evidence and then using value judgements, and portraying that by being cloudy and making the colours sort of mesh into each other'; another: 'We changed things to a bit more red than we actually had agreed on, but everybody was so exhausted of fighting about this' (quoted in Mahony, 2015: 157–159).

Three Key Readings

Beck, S. and Mahony, M. (2018). The IPCC and the new map of science and politics. *WIREs: Climate Change*, 9(6): e494. http://doi.org/10.1002/wcc.547

This paper reconstructs the history of 'boundary work' within and around the IPCC, and describes the new challenges the IPCC is likely to face in an evolving climate policy landscape.

Edenhofer, O. and Kowarsch, M. (2015). Cartography of pathways: a new model for environmental policy assessments. *Environmental Science & Policy*, 51: 56–64. http://doi.org/10.1016/j.envsci.2015.03.017

This paper succinctly describes the 'IPCC-as-map-maker' approach to reconciling the competing demands of policy relevance and neutrality.

Havstad, J. C. and Brown, M. J. (2017). Neutrality, relevance, prescription, and the IPCC. *Public Affairs Quarterly*, 31(4): 303–324. http://doi.org/10.2307/44732800

This paper argues that the IPCC's stated goal of being 'policy-neutral' can be interpreted in many different ways, some of which have generated misunderstandings and damaged the IPCC's credibility. The authors argue that being non-prescriptive is a better characterisation of the IPCC's overall mandate.