



Policy-relevant and yet policy-neutral, never policy-prescriptive

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Abstract

This paper explores the role of expert organizations in global environmental governance and combines constructivist approaches to explore how and with what effects they act as a politically powerful agent in politics even if they claim to be neutral and not policy prescriptive. These analytical considerations are now illustrated empirically with special reference to the IPCC which has served as a pioneer in global assessments. Due to its achievements, the IPCC has also become a role model and trendsetter for the Millennium Ecosystem Assessment (MEA) and the newly established Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES). Finally, the chapter asks what lessons can be learnt from these empirical findings to inform the debate about the future role of expert organizations. It also suggests a number of questions arising from the analysis that need to be addressed by future research and invite to a closer dialog between different social science traditions such as IR, science and technology studies and deliberative theory.

Introduction

The IPCC has become established as a pioneer in science based global policy: it has conducted the most comprehensive synthesis of scientific knowledge on climate change to date and has managed to include experts from around the world in policy advice activities. Experts have come to play a significant role in global environmental governance. The growing demand for policy-relevant knowledge has led to the emergence of a novel set of expert organizations to fulfill this role. These organizations are entrusted with the task of assessing available scientific information on environmental change and presenting it in a form that is useful to policy makers. This process (and its outcome) is referred to as an ‘assessment’ (Mitchell et al. 2006, p. 3). Due to its achievements, the IPCC has also become a role model for the Millennium Ecosystem Assessment (MEA) and the newly established Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES).¹ The growing demand for expertise reflects the extent to which policy has become science-based in fields such as global warming, biodiversity, stratospheric ozone depletion, air pollution, forest conservation and indeed sustainability policy as a whole, all of which are increasingly linked to issues such as international security, development and economic growth (for an overview, see Gupta et al. 2012).

¹ In January 2014 a new scientific advisory body, the UN Scientific Advisory Board (SAB), was created by UN Secretary-General Ban Ki-moon. It is worth noting that a new advisory body has been formed in 2014 to serve the UN Convention on Combating Drought and Desertification (available at <http://www.unccd.int/en/programmes/Science/International-Scientific-Advice/Pages/SPI-1st-meeting.aspx>). There are also calls for an IPCC-like global effort in the field of emerging disease and health (available at <http://www.nature.com/news/policy-an-intergovernmental-panel-on-antimicrobial-resistance-1.15275>, accessed 21 September 2014).

Section one asks what constructivist approaches can contribute to explaining the role of experts in climate governance. Section two discusses existing empirical findings on the IPCC's role in policy in the light of these different constructivist approaches. Finally, the chapter asks what lessons can be learnt from these empirical findings to inform the debate about the future role of the IPCC. It also suggests a number of questions arising from the analysis that need to be addressed by future research (section 3).

Addressing the role of international expert organizations in global climate governance

Constructivist work on the role of international expert organizations has burgeoned in response to the case of the IPCC and includes such diverse literature as scholarship in International Relations (IR), research on global environmental assessments and work in Science and Technology Studies (STS). The question we need to ask, therefore, is: What do different constructivist approaches to international expert organizations offer to describe the IPCC as a political actor in climate governance?

Work done by Peter Haas is widely considered to be the most influential in this debate. Haas' approach is located at the intersection of actor-oriented social constructivist and neo-liberal IR theories. In the field of IR, constructivism is defined by the claim that significant aspects of world politics are not just 'out there' waiting to be discovered; they are historically and socially constructed through social interaction. Adler (1997), Barnett and Finnemore (2004) or Siebenhüner (2008) are other examples in that tradition (see Fierke 2007). Haas, as a pioneer of constructivism in IR, refers to transnational networks of professionals with an authoritative claim to possessing policy-relevant knowledge in a particular area as *epistemic communities* (Haas 1992, p. 2). Over the years his research has sought to identify the conditions under which such networks of experts are able to exert political influence in the international system (Haas and Stevens 2011).

Contested Autonomy

Constructivist approaches all share the assumption that international (expert) organizations are autonomous actors in global politics as far as they constitute distinct institutions in their own right, consisting of internationally accepted principles, norms and decision-making procedures for producing expert knowledge (Biermann 2002).

While the influence of epistemic communities, for example, on the behavior of states and international cooperation has already been discussed in considerable detail, the internal dynamics of such processes of knowledge production have thus far remained largely obscure (cf. also Siebenhüner 2008). At first glance, constructivist approaches offer new insights to the debate on climate governance because their attention is focused not so much on the output of these organizations as on the manner in which they conduct their work.

When it comes to the nature and the extent of autonomy of international expert organizations towards nation states, however, a number of major differences become

apparent between these different constructivist approaches: IR scholars focus on the formalized interplay between science and policy as wholly separate domains, the former being able to provide the latter with consensual knowledge on which policy decisions can be based (*speaking truth to power* – see, for example, Haas 1992). Work in STS can be designated as belonging to the radical poststructuralist/constructivist accounts (Jasanoff 2004, 2012, Miller 2001, 2009). They challenge the idea that science is an autonomous ‘republic’ as a given social entity with clear-cut and stable boundaries separating it from political actors. As an alternative, they pay attention to how claims to epistemic and political authority come into being, how they are challenged and how they are sustained (‘in the making’) (Jasanoff 2012) and they also turn from ‘who’ to ‘how’ questions by drawing attention to the practices and devices through which experts acquire status and authority (Jasanoff and Martello 2004, Hajer 2009). Such approaches insist that the autonomy of experts is not a factor that explains the dynamics at work inside an organization (as constructivist IR approaches claim, see Haas and Stevens 2011); instead, its (often contested) making is a phenomenon that needs to be explained. Following the work of Latour and Foucault, they also regard authority of actors as the outcome and the (co-)product of contingent interactions rather than existing in a natural state and waiting to be discovered (Jasanoff 2004).

The Neutral or Political Nature of Expertise?

The co-productionist turn has at least three implications, as explained in the following. First, while constructivist IR approaches defend the political neutrality of experts, STS approaches, by contrast, highlight the intensely hybrid character of knowledge production. They stress the constant interplay of the cognitive, the material, the social and the normative (Jasanoff 2004, p. 38). As a result of their mutual co-production, epistemic commitments to what a thing is (ontology) are inseparable from normative commitments to what ought to be (norms).

Secondly, the STS perspectives explored here draw our attention to the ways in which scientific or expert representations are performative in themselves. The co-production idiom seeks to identify a feedback loop between analysis and behavior: providing expertise is always an active intervention that ‘performs’ and alters the real world phenomena it seeks to represent (Jasanoff 2012). The way problems are framed by experts shapes our view of social needs and of the kinds of political responses that count as scientifically ‘sound’ and politically necessary. What is of interest, from a STS perspective, is how the emergence of new configurations of expertise transforms processes of knowledge-making and political action (Jasanoff and Martello 2004, p. 18).

Thirdly, STS approaches pay attention to the politics of expertise into the debate by drawing our attention to the political dynamics and the epistemological underpinning of the hybrid organization. The main contribution of STS from which IR research could benefit is a more thorough understanding of what takes place behind the formal design of assessments (Lidskog and Sundqvist 2011). Yet these approaches also open up understandings of how these ‘front stage’ performances are governed by ‘back stage’

practices inside the organization, and how they are shaped by (and also shape) wider social, economic and political orders.

Constructivist work in IR has been preoccupied with the influence of experts in defining state interest, thus maintaining a rather rationalist and institutionalist outlook. While these approaches hold that the autonomy of the agents and their scope of action are determined by the design of their organization (Haas and Stevens 2011), STS approaches highlight that there is potential room for maneuver and choice for reconfiguring the identity of actors and the respective institutional design (Jasanoff 2004). The emergence of an organization is viewed as an open-ended social experiment in itself. Radical constructivist approaches highlight the way globalization processes challenge previously unquestioned arrangements such as state sovereignty, resulting in a normative and institutional ‘void’ in which alternatives to existing transnational arrangements become visible.² This condition, also known as the ‘post-national constellation’ (Zürn et al. 2012), also offers opportunities for the reflexive politicization of expert organizations, including ways of reconfiguring statehood and performing power.

The constellation can lead to shifts and thus to conflicts over the allocation of power and values. If the scope of action and political intervention for state and non-state actors can be reconfigured in the course of globalization, the formal delegation of authority between governments and scientists as well as the clear-cut and stable demarcation between their responsibilities cannot be taken for granted anymore but is instead open to challenge and change. As a result, tensions between governments and the intergovernmental expert authorities arise, forcing renewed examination of concepts such as national sovereignty. Various ‘hard’ constructivist approaches apply here: conflicts over the allocation of epistemic and political authority (first order conflicts) are often rooted in more fundamental differences over values such as the role of science in society and standards and sources of legitimation (second order conflicts, or reflexive conflicts over legitimation (Zürn et al. 2012). Both idioms revolve around the same idea: given the normative and institutional void, the criteria and standards of appropriateness according to which, for example, experts are selected or the quality of expert reports evaluated may also become a matter of dispute (Hajer 2009).

To sum up, then, radical constructivist approaches discussed here differ from the approaches in IR in two constitutive features. First, they insist on the potential for reconfiguring previously unquestioned identities and arrangements such as the role of experts in policy (Zürn et al. 2012, Jasanoff 2012). Secondly, they call attention to their epistemological and normative underpinnings and raise ontological questions about the

² These features are enhanced by the ‘institutional void’ and by the absence of shared rules and responsibilities. As a result, organizations have to develop a shared understanding of what the problem ‘really’ is and to ‘set the stage’; they have to work out the rules according to which (legitimate) decisions are to be made and they need to secure mutual trust (Hajer and Versteeg 2005).

nature of expertise, statehood and the way these are challenged and thus made open to redefinition and change.

Key empirical findings

What can we learn from constructivist scholars to understand the role of IPCC in climate governance? The IPCC was set up jointly by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) in 1988. Its task is to undertake a comprehensive, objective, open and transparent review of the status of research on global warming, its observed and projected impacts, and on the policy response options available (UNGA 43/53 1988).³

Intergovernmental Status – Political ‘leash’ or ‘muscle’?

The IPCC is set up as an intergovernmental panel. According to Haas and Stevens, the IPCC “is designed to keep science on a tight leash” (2011, p. 147). They apply the principal-agent theory to the IPCC: in this scheme governments are the ‘principal’ and the scientific community is the ‘agent’ (p. 148). In other words, they take the material interests and preferences of governments as the ‘principal’ for granted. Following this theory, the principals design the institution by establishing and enforcing the parameters within which the agents have to act (p. 148). As a matter of fact, the member states have decision making authority in the Panel’s plenary sessions.⁴ This is a significant factor in the self-organization of the Panel, as the plenary decides not only on the structure, content and results of the assessment reports but also on the procedures of reporting and quality control and the division of work within the Panel (between plenary, secretariat and working groups) as well as on the organization’s decision making procedures per se.

The ‘leash’ metaphor suggests that governments have designed the IPCC mainly for strategic reasons, namely, in a way that ensures they are able to exercise maximum control over individual scientists. The main rationale is ‘to minimize surprises from the agent and to ensure that the agent will not provide advice that runs counter to the principals’ ex ante interests and preferences’ (p. 147). Haas and Stevens work with a simple form of politicization in terms of governmental control over experts and thus focus only on the instrumental use of expertise for the purpose of political legitimation.

From a STS perspective it is empirically open whether or not intergovernmental status fully determines the extent of autonomy of experts inside the IPCC. The interests and preferences of governments are neither clear nor ex ante determined, but they can be read as the outcome of contested hybrid negotiations involving a broad range of actors and organizations. The decision to grant the newly emerging organization intergovernmental status was a ‘lowest common denominator’ – a minimum outcome accepted by all parties

³ For an overview of the genesis and early development of the IPCC, see Agrawala 1998. For its organization and rules of procedure, see Petersen 2011.

⁴ Available at http://www.ipcc.ch/organization/organization_procedures.shtml (accessed 21 May 2012).

involved at the time. It serves different functions rather than simply controlling experts: IPCC representatives, such as its first chairman Bert Bolin, describe the intergovernmental status as the IPCC's political muscle (Agrawala 1998). The inclusion of governments in the Panel's negotiations is one of the key linking strategies that creates a connection between the IPCC as provider of assessment reports and its clients and customers – nation states and intergovernmental organizations such as the UN and the WMO. It guarantees the political relevance of the Panel's scientific agenda and results and the legitimacy of its ways of working. Another aspect is that once the assessment reports have gone through a process of scientific peer review they are approved and authorized once again by governments, which greatly contributes towards lending them political weight.

IPCC procedures such as the approval of the Summary for Policymakers (SPM) by governments remain highly contested, as the IPCC plenary held in April 2014 in Berlin shows, where governments approved the third of three reports comprising the Fifth Assessment Report (AR5).⁵ According to Haas and Stevens, governments use this procedure to monitor the IPCC's findings, to ensure 'cautious' outcomes and to shape the agenda for climate change negotiations (2011, p. 148). One of the IPCC lessons from Berlin 2014 is that line-by-line approval of its reports yields the lowest common denominator of what is scientifically accurate and 'not too toxic for governments'.⁶ Coalitions of governments often try to exclude certain passages from the SPMs - such as those pertaining to the governance of geoengineering and geoengineering research - which they do not want to play a role in UNFCCC discussions.⁷

From the perspective of radical constructivist approaches, intergovernmental status does not automatically imply the loss of authority of experts; it can also – apparently paradoxically – indicate the opposite, namely, the political power that is attributed to the Panel. The very establishment of the Panel attracted remarkable attention, and it has increasingly been subject to monitoring by international and national actors such as the UN and the US. Once representatives of the United Nations and the US had recognized the key significance of the envisaged body as a potential driver of international climate policy they immediately attempted to exert influence on its organizational setup (Agrawala 1998). These observed forms of politicization can be explained as a consequence of the epistemic and political authority that is assigned to the new established expert panel (Zürn et al. 2012).

⁵ Available at <http://www.sciencemag.org/content/345/6192/34.1.summary> (accessed 21 September 2014).

⁶ Available at <http://www.sciencemag.org/content/345/6192/34.2.full.pdf> (accessed 21 September 2014).

⁷ Available at <http://geoengineeringourclimate.com/2014/09/09/the-emergence-of-the-geoengineering-debate-within-the-ipcc-case-study/> (accessed 21 September 2014).

Policy Relevant but not Prescriptive?

During its first assessment cycle (1988-90), the IPCC also had the task of assessing existing legal instruments and additional elements of an international framework convention in the run-up to the Rio conference (UNGA 1988, Art. 10). In doing so it laid out the bare bones of the United Nations Framework Convention on Climate Change (UNFCCC), which was adopted at Rio in 1992. Since the Panel at that time was also the forum in which political negotiations were conducted, it became the target of heavy-handed attempts by lobby groups and nation states to influence its work. These forms of politicization proved to be problematic for the scientific integrity of the entire organization. As a response, the IPCC decided in 1990 to withdraw from political functions and no longer put forward policy recommendations. This decision is reflected in the redefinition of the IPCC's mandate to provide policy-relevant information without being policy prescriptive. This self-description is used by all IPCC representatives to define the IPCC's role in relationship to policy.⁸ Interestingly, Haas' concept of science-driven, autonomous expertise is consistent with the self-understanding of many government-designated scientists and experts in the IPCC.⁹ This example illustrates that the IPCC has redefined its role in order to respond to its political vulnerability and its potential loss of scientific integrity. It demonstrates that the IPCC's role in policy is not *static* but is rather subject to readjustment. This is clearly highly significant in terms of the organization's capacity to adapt to challenges and changing expectations in its environment. When the IPCC withdrew from political functions in 1990, the external division of tasks between the IPCC and governments was reorganized in order to uphold the Panel's basic understanding of its own identity – its political neutrality and the strict demarcation between science and policy. These forms of boundary work – whether intentional or not – serve to maintain the stability of the boundary and a clear-cut line of demarcation between each sphere and its respective realm of responsibility.

Political Impacts

The extent to which experts have been effective in influencing state responses to environmental problems has been the subject of considerable debate (Lövbrand 2014). According to Haas and Stevens (2011, p. 145), the IPCC has failed to help bring about internationally binding agreements for the reduction of greenhouse gases. Empirical findings demonstrate that the IPCC nonetheless exercises a considerable amount of political influence: it has spoken on behalf of global science with one uniform voice and has played a key role in providing the epistemological foundations for climate policies and raising political and public awareness of climate change (IAC 2010, p. 63). The Panel has delivered 'sound' scientific proof that climate change has already set in and that its causes are predominantly human induced. It was jointly awarded the 2007 Nobel Peace Prize along with former US Vice President Al Gore. More than anything else, the Nobel Peace

⁸ Available at <http://www.nature.com/nclimate/journal/v1/n5/pdf/nclimate1178.pdf> (accessed 21 September 2014).

⁹ Available at <https://www.ipcc.ch/organization/organization.shtml> (accessed 21 May 2013).

Prize is seen as an acknowledgment of the political ‘impact’ and ‘influence’ of the Panel (IAC 2010). Events such as this have contributed to putting the IPCC onto the world stage. Even if the Panel claims to be neutral and not prescriptive, it acts as a politically powerful ‘intergovernmental actor in climate politics. These findings speak to the constructivist IR literature on the independent power of international organizations (see Barnett and Finnemore 2004, Siebenhüner 2008). In that sense both STS perspectives and constructivist IR perspective help illustrate the impact of IPCC in complementary ways.

In the aftermath of the 15th Conference of the Parties in December 2009 a media storm arose over the illegal publication of e-mails written by leading climate researchers (‘climategate’) and errors in the IPCC assessment reports (Beck 2012). These seemingly paradoxical events again indicate that the IPCC has become a victim of its own success such that, as a consequence of the authority ascribed to it, the Panel has attracted a remarkable amount of public attention and critical public scrutiny. The degree of its politicization can thus be seen as an indicator of its epistemic authority (Zürn et al. 2012, p. 87).

These achievements lead to a paradoxical situation. The IPCC’s responses to public scrutiny¹⁰ show that the organization is caught in a dilemma: the same mechanisms that have served to maintain the IPCC’s political authority (such as its intergovernmental status and consensus-based procedures) also turn out to be obstacles that constrain political debate (Beck et al. 2014). The quest for increasingly integrated and consensus-based decision support can be regarded as one of the key reasons for the inertia of the organization and the consequent lack of political action. The IPCC’s political muscle – its intergovernmental status and consensus-based procedures - turns out simultaneously to be its Achilles heel.¹¹ They result in a ‘lowest common denominator’ – a minimum outcome accepted by all the parties involved at any one time. As result, they have also limited the range of solutions put forward for debate in the reform negotiations. Alternatives to

¹⁰ In 2010, as a response to this public criticism, the IPCC’s procedures were subjected to several national and international processes of review. For this purpose an alliance of national scientific academies – the *InterAcademy Council* (IAC) – was set up at international level, whose results were published in August 2010 (IAC 2010). Its final report rejected the accusation of deliberate manipulation and concluded that the key statements contained in the IPCC reports were correct. The IAC also emphasized that in its present form the Panel was no longer able to cope adequately with the challenges it faces (IAC 2010, pp. 6, 39). The mismatch indicated a lack of organizational adaptability, which – according to the Council – had led to a situation in which its entire work had become discredited. A statement of this kind additionally suggests a need for comprehensive reform.

¹¹ The Panel’s website has a dedicated page summarizing the reforms made by the IPCC to its processes and procedures in response to the IAC’s recommendations (see Review of IPCC processes and procedures, available at http://ipcc.ch/organization/organization_review.shtml#.UIE_UsWkqTV, see also <http://www.ipcc.ch/apps/future/> (accessed 21 September 2014).

existing institutionalized procedures (such as the introduction of minority votes, majority decision making and elevating the official status of observer organizations) have been virtually excluded from the debate. These reform efforts have ultimately served to protect and stabilize the IPCC's organizational structures rather than to critically examine them and enable it to change its mandate and its guiding principles. As a result, the IPCC reforms do not address the causes of the organizational inertia (intergovernmental status, consensus-based procedures) but merely the symptoms (incremental revisions of procedures). Even if there is 'no appetite for revolution'¹², incremental change may not be enough to address future challenges.

From a radical constructivist perspective, this lack of organizational reflexivity and policy impact points to the more profound issue of how the problem is framed. It is widely assumed that a global problem such as climate change can be solved by rational expert consensus. The mantra of being policy relevant but not prescriptive goes back to an idealized form of policymaking based on neutral scientific advice that serves as a rational foundation for political decision-making (see also Haas 1992). Since epistemic authority counts as the sole foundation of political authority, policy debates can be decided by scientific evidence alone (Wynne 2010). Empirical findings, however, indicate that political effectiveness and public trust cannot be reduced to a function of the breadth and depth of scientific consensus alone. While the IPCC has been able to provide a common knowledge base for international climate policies, the degree of uptake of its messages and its credibility in the eyes of citizens and policy makers around the world still vary significantly.

These differences cannot be explained solely by the quality of scientific knowledge available, because they refer to the same body of knowledge (produced by the IPCC). As responses to the so-called 'climategate' affair show, public trust in experts is also related to the performance and persuasive power of the people and institutions who speak for science (Hajer 2009) and to deeply embedded styles of evaluating knowledge claims in the public sphere (Beck 2012, Jasanoff 2012). The public controversies surrounding climategate thus show that a shared set of values or universally valid norms or their convergence, as suggested by Haas (1992), cannot be taken for granted. From a STS perspective, the controversies surrounding climategate can be seen as symptoms of a *civic epistemology in the making*. When the IPCC was created in 1988, it faced the challenge of inventing its own forms of procedural rules and organizational culture 'from scratch'. Since then, the IPCC has become a pioneer in developing and enacting rules of procedure at the global level. As a result, key categories such as political relevance, transparency and accountability themselves have become contested. These conflicts reflect crucial political and normative disagreements rather than being a means by which to transcend such *reflexive conflicts over legitimization* (Gupta et al. 2012). They demonstrate its status as a 'hybrid' organization representing both scientific experts and representatives of its constituent member states.

¹² Available at <https://www.ucl.ac.uk/steapp/docs/ipcc-report> (accessed 21 September 2014).

Future research issues

Civic epistemologies in the making

The future research issues arising from these empirical findings can be considered in relation to three major challenges of relevance to scholars and practitioners alike. The case study demonstrates that – even if no political decision making authority is granted to it (as is the case, for example, with the International Criminal Court) – the IPCC nonetheless exercises a considerable amount of political influence. This conclusion is precisely the prediction of the principal-agent approach, namely that the principal cannot fully control the agent and that there is slack (see Haas and Stevens 2011, Biermann 2002). The IPCC provides an illuminating example of governments having delegated the task of articulating a shared epistemic foundation for global policy to a centralized international institution (Miller 2009, p. 142). From a STS perspective, the key challenge arising from this form of delegation is how expert organizations are to navigate between difficult questions of expertise and political accountability and representation rather than insisting on their neutrality. Is it to be a closed conversation between (accredited) experts and policy-makers? Or do the views of the public matter?

The events surrounding ‘climategate’ can be read as *second order conflicts* over the proper form of legitimation and civic epistemology of the IPCC. The IPCC has faced the challenge of developing practices of public reasoning capable of bridging the various divides between different countries and research disciplines. The controversies inside the IPCC plenary also indicate that particular requirements and standards remain contested: is the IPCC sufficiently legitimized by the quality of its expertise and its rational outcomes or by the formal mandate of the United Nations? Should it be accountable first and foremost to the public and thus satisfy more exacting standards of transparency and accountability towards civil society? The empirical findings discussed above show that the epistemic and political authority and their implications in terms of democratic theory have been understood only vaguely thus far but are sure to acquire greater significance as evidence-based policy becomes more commonplace.

Responsiveness and embeddedness in changing contexts - The role of expert organizations in a post-Kyoto architecture

One of the key empirical outcomes of research on expert organizations is that science is rarely effective in terms of compelling public policy (Haas and Stevens 2011, Jasanoff 2012). This result suggests a need to shift the focus from the production of expert knowledge to the forms and practices of its reception in the global policy community and to take into account the broader political setting in which they are embedded. There is a growing need to understand whether science-based policies contribute towards transforming global forms of governance and, if so, in what way. Empirical findings so far point to an ever more pressing need to understand the nature of effective institutional arrangements for representative, accountable and democratic public policy (Gupta et al. 2012). One of the key research issues at this point is how to link micro-analysis of expert organizations to the macro-political and economic institutions that shape social and

environmental change on global scales and raise broader questions around what are the appropriate normative and institutional foundations of more democratic and accountable global governance.

International climate research and policy, in which IPCC activities are embedded, are in a phase of reorientation. One sign of this is that the trend towards integrated scientific approaches and standardized procedures is gaining ground internationally. For example, in the last few years all international Global Change programs have been combined together within the *Future Earth – Research for Global Sustainability* initiative.¹³ Another indication is that in international environmental and sustainability politics, there is talk of a crisis of the multilateral system and of a trend towards greater institutional fragmentation. It can be assumed that these developments will lead to novel demands being placed upon boundary organizations such as the IPCC as well as to new conflicts within them. The IPCC case provides few indications that comprehensive forms of international collaboration promote transnational convergence and uniformity by expanding the base of shared knowledge. There is little evidence that policy relevant issues (e.g. procedures) and standards (e.g. public accountability) are starting to converge as a result of multilateral cooperation; instead, the evidence suggests that they remain context-sensitive and path-dependent, thus highlighting not convergence and uniformity but rather divergence and diversity (Beck 2012, Jasanoff 2012). These trends indicate that the tension between the globalization of research and standardization of scientific approaches and the regionalization of politics and diversification of standards is intensifying.

The IPCC faces the challenge of adjusting to a changing political architecture. When the Panel was formed in 1988, however, it fitted neatly into the UN's multilateral order based on national representation and the search for internationally negotiated solutions. Since the international community failed to negotiate a successor agreement to the Kyoto Protocol at the Copenhagen Summit in 2009, its political context has changed to a more fragmented, polycentric order where governance occurs not simply at the level of nation states alone and where policy needs to address diverse citizens with multiple values and sources of knowledge. In an increasingly complex post-Kyoto landscape, the IPCC has to respond to diverse political communities and distributed governance structures. While IPCC reports may provide legitimacy for international climate policies, a disjunction exists between the IPCC and many other reports being produced that are regional, national or local, and sector specific. The regionalization of IPCC assessments is called for in order to give policy-makers and practitioners more and better regional information. Leading IPCC representatives, however, argue that this approach would require fundamental changes to the established and successful IPCC assessment process that has been in place since 1988.¹⁴

¹³ Available at <http://www.csap.cam.ac.uk/media/uploads/files/1/fdsaw.pdf> (accessed 22 July 2012).

¹⁴ Available at <http://www.nature.com/news/climate-policy-rethink-ipcc-reports-1.15848>, accessed 21 September 2014).

This setting also implies that the global character of the climate-change problem exemplified by the IPCC and ponderous, centralized IPCC-style assessment will not work in this setting.¹⁵ Thus, what role can the IPCC play in the post-Kyoto regime and how can it contribute to a fragmented climate governance order? That there is considerable need for more thoroughgoing political reform and scientific research seems clear, however. This can be fruitfully enhanced by closer dialogue between different social science traditions such as IR, science and technology studies and deliberative theory.

¹⁵ Available at <http://www.sciencemag.org/content/345/6192/34.2.full.pdf> (accessed 21 September 2014).

Bibliography

- Adler, E. (1997), 'Seizing the Middle Ground: Constructivism in World Politics', *European Journal of International Relations*, **3** (3), 319-363.
- Agrawala, S. (1998), 'Context and early origins of the Intergovernmental Panel on Climate Change', *Climatic Change*, **39** (4), 605-620.
- Barnett, M. and M. Finnemore (2004), *Rules for the world: International organizations in global politics*, Ithaca: Cornell University Press.
- Beck, S. (2012), 'The Challenges of Building Cosmopolitan Climate Expertise – with Reference to Germany', *Wiley Interdisciplinary Reviews: Climate Change*, **3** (1), 1-17.
- Beck, S., Borie, M., Esguerra, A., Chilvers, J., Heubach, K., Hulme, M., Lidskog, R., Lövbrand, E., Marquard, E., Miller, C., Nadim, T., Nesshöver, C., Settele, J., Turnhout, E., Vasileiadou, E. and C. Görg (2014), 'Towards a reflexive turn in governing global environmental expertise – the cases of the IPCC and the IPBES', *GALA*, **23** (2), 80-87.
- Biermann, F. (2002), 'Institutions for Scientific Advice: Global Environmental Assessments and their Influence in Developing Countries', *Global Governance*, **8** (2), 195-219.
- Fierke, K.M. (2007), 'Constructivism', in T. Dunne, M. Kurki, S. Smith (eds.), *International Relations Theory: Discipline and Diversity*, New York: Oxford University Press, pp. 166-184.
- Gupta, A., S. Andresen, B. Siebenhüner and F. Biermann (2012), 'Science Networks', in F. Biermann and P. Pattberg (eds.), *Global Environmental Governance Reconsidered*, Cambridge MA: MIT Press, pp. 69-93.
- Haas, P.M. (1992), 'Epistemic Communities and International Policy Coordination', *International Organization*, **46** (1), 1-35.
- Haas, P. and C. Stevens (2011), 'Organized Science, Usable Knowledge, and Multilateral Environmental Governance', in R. Lidskog and G. Sundqvist (eds.), *Governing the Air: The Dynamics of Science, Policy, and Citizen Interaction*, Cambridge, MA: MIT Press, pp. 125-162.
- Hajer, M. (2009), 'Authoritative Governance. Policy Making in the Age of Mediatization', Oxford: Oxford University Press.
- Hajer, M. and W. Versteeg (2005), 'Performing governance through networks', *European Political Science*, **4** (3), 340-347.
- IAC (InterAcademy Council) (2010), 'Climate Change Assessments. Review of the Processes and Procedures of the IPCC', Amsterdam: InterAcademy Council, available at <http://reviewipcc.interacademycouncil.net> (accessed 31 March 2011).
- Jasanoff, S. (ed.) (2004), *States of knowledge: the co-production of science and social order*, London: Routledge.

- Jasanoff, S. (2012), *Science and Public Reason*, New York: Routledge.
- Jasanoff, S. and M. Martello (eds.) (2004), *Earthly Politics. Local and Global in Environmental Governance*, Cambridge, MA: The MIT Press.
- Lidskog, R. and G. Sundqvist (eds.) (2011), *Governing the Air. The Dynamics of Science, Policy, and Citizen Interaction*, Cambridge, MA: MIT Press.
- Lövbrand, E. (2014), 'Knowledge and the Environment', in M. Betsill, K. Hochstetler and D. Stevis (eds.), *Advances in International Environmental Politics*, 2ed, Basingstoke: Palgrave Macmillan, pp. 161-184.
- Mitchell, R.B., W.C. Clark, D.W. Cash and N.M. Dickson (eds.) (2006), *Global Environmental Assessments. Information and Influence*, Cambridge, MA and London: MIT Press.
- Miller, C. (2001), 'Hybrid Management: Boundary Organizations, Science Policy, and Environmental Governance in the Climate Regime', *Science, Technology & Human Values*, **26** (4), 478-500.
- Miller, C. (2009), 'Epistemic Constitutionalism in International Governance: The Case of Climate Change', in M. Heazle, M. Griffiths and T. Conley (eds.), *Foreign policy challenges in the 21st century*, Cheltenham; Northampton, MA: Edward Elgar, pp. 141-163.
- Petersen, A.C. (2011), 'Climate Simulation, Uncertainty, and Policy Advice—The Case of the IPCC', in G. Gramelsberger and J. Feichter (eds.), *Climate Change and Policy: The Calculability of Climate Change and the Challenge of Uncertainty*, Dordrecht: Springer, pp. 91-111.
- Siebenhüner, B. (2008), 'Learning in international organizations in global environmental governance', *Global Environmental Politics*, **8** (4), 92-116.
- UNGA (1988), 'Conservation of Climate as Part of Common Heritage of Mankind,' *Draft resolution proposed by Malta*, October 26.
- Wynne, B. (2010), 'When doubt becomes a weapon', *Nature*, **466**, 441-442.
- Zürn, M., M. Binder and M. Ecker-Ehrhardt (2012), 'International authority and its politicization', *International Theory*, **4** (1), 69-106.