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THE AUTHORITY OF EXPERTISE IN GLOBAL ENVIRONMENTAL ASSESSMENTS: IPBES AND THE CHALLENGE OF PLACEFULNESS

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The authority of expertise in Global Environmental Assessments: IPBES and the challenge of placefulness

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ABSTRACT

Fifty years ago, Michael Polanyi wrote his classic essay in defence of the autonomy of scientific enquiry: *The Republic of Science: its political and economic theory.* Contrasting with this vision, the past 30-years have seen the proliferation of Global Environmental Assessments (GEAs) which are explicitly associated with societal goals. The most recent example is the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES) which has been officially established in April 2012 and aims at tackling the "biodiversity crisis". In this paper, we provide some context regarding the multiplication of GEAs and highlight their key characteristics (drawing upon concepts from science studies). After reviewing briefly some of the lessons that have been learned regarding the effectiveness of GEAs, we argue that the main tensions affecting the authority of GEAs can either be related to their horizontal dimension – that is between science and policy – or their vertical dimension – between different scales (local/global). Building on results from science studies and political science, we show that the tensions arising from these two dimensions can be associated with their geographical sensitivity and the fact that "place matters". A spatial understanding of authority is needed to describe how place, or locality, affects the epistemic and political dimensions of expertise.

Key words: Global environmental assessments, IPBES, expertise, place

3S Strand: Knowledge and expertise

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THE MULTIPLICATION OF GEAs

Over the past 30 years, the field of global environmental politics has been marked by the proliferation of global environmental assessments (GEAs). Since the creation of the International Ozone Assessment in 1981, "global assessments have become all the rage" (Scoones 2009: 547). In 1988, the establishment of the Intergovernmental Panel on Climate Change (IPCC) signalled the birth of an institution which is still one of the most prominent examples of such initiatives and which has acted as a model for the development of knowledge assessments of other environmental issues such as biodiversity loss. In April 2012 in Panama, the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) was officially established after seven years of negotiations and this emerging institution has often been referred to as an "IPCC-like mechanism for biodiversity" (e.g. Larigauderie & Mooney, 2010; Loreau et al., 2006). Several initiatives had been preparing the ground for IPBES, especially the Millennium Ecosystem Assessment (MA) and the consultative process for an International Mechanism on Scientific Expertise for Biodiversity (IMOSEB). Conducted in the mid-1990s, the Global Biodiversity Assessments (GBA) can also be identified as a previous attempt conducted by researchers to synthesize knowledge on biodiversity at a global scale.

GEAs can take different forms and serve different purposes; their scope and comprehensiveness vary greatly. And while some are carried out in an intergovernmental context on a regular basis, such as in the case of the IPCC, others are just a one-shot initiative, such as the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD). Until present, four inter-related functions have been identified for IPBES: knowledge generation, assessment, policy support and capacity building.

The context and specificities of these GEAs are key for understanding their highly variable political influence. For instance, the Ozone Assessment enabled the adoption of an international Treaty on substances that deplete the ozone layer (known as the Montreal Protocol, 1987) and the IPCC encouraged the adoption of the United Nations Convention on Climate Change (UNFCCC, 1992) and the creation of the Kyoto Protocol, which aimed at addressing global warming, in 1997. In this respect both assessments can point to 'successes' - even though this judgment can be nuanced if we consider, for instance, the fact that the United States never accepted to ratify the Kyoto Protocol.

On the contrary, other initiatives have had very little political impact, such as in the case of the GBA which is often regarded as a failure despite its good scientific quality. The absence of an authorizing mandate – "The GBA, while being an excellent scientific assessment, had limited impact on international policy formulation as it lacked a clear authorizing mandate" (Watson & Gitay 2004: 4) – and the absence of recognition from the Convention on Biological Diversity (CBD) are among the reasons which have been identified to explain this lack of success. As explained by Leemans (2008: 12) "the CBD stated that it had its own scientific advisory panels and that additional scientific information was not needed. The two other assessments (IPCC and MA) were from the beginning more strongly linked to the policy community and the UN Conventions."

This example highlights the fact that the authority of expertise in the context of GEAs does not simply depend on the quality of the science that lies behind them – i.e., expertise is not only about knowledge-claims; expertise also has political and sociological dimensions that are key to understanding the success, or lack thereof, of these initiatives. In all cases, the knowledge that is

made in the context of GEAs is oriented towards societal goals. This means that we are here in a particular configuration of science, a configuration which is very different from the one that Michael Polanyi defended fifty years ago.

CHARACTERIZING SCIENCE AND EXPERTISE IN THE CONTEXT OF GEAs

Exactly 50 years ago this month, Michael Polanyi wrote his classic essay in defence of the autonomy of scientific inquiry: *The Republic of Science: its political and economic theory* (1962). While he had high regard for the contribution of science to the ideal of (individual and social) self-improvement, he believed that this could only be achieved under certain conditions of scientific self-governance: "(...) we reject today the interference of political or religious authorities with the pursuit of science [and] we must do this in the name of the established scientific authority which safeguards the pursuit of science" (p. 68). Responding to those who wanted to guide science towards public welfare he wrote "I appreciate the generous sentiments which actuate the aspiration of guiding the progress of science into socially beneficent channels, but I hold its aim to be impossible and nonsensical" (p. 62).

According to Polanyi, the authority of science rests mostly upon tradition. Imposing societal goals to this "Society of Explorers" would hamper its freedom and spontaneity, and thus, the quality of scientific inquiry. This argument reveals a tension which is still felt today in the practice of science and its appropriation by society, a tension between the unencumbered search for scientific truth on the one hand (revealing the world as it really is[1]) and the need for science to be marshalled towards specific societal goals on the other (shaping the world towards societal norms). This tension is at the core of all GEAs since, contrary to Polanyi's vision, such assessments aim explicitly at serving society and are situated at the so-called "science-policy interface" – they cannot be described as "pure" scientific enterprises, yet neither as mere political initiatives.

This hybrid nature is well emphasized in the various definitions of GEAs that have been proposed. Even if GEAs all have different characteristics, it has been possible to identify some common features. For example, some authors have proposed to define such assessments as "formal efforts to assemble selected knowledge with a view towards making it publicly available in a form intended to be useful for decision-making" (Clark et al. 2006: 3). An alternative definition emphasizes the social dimension of such assessments: "assessments should be viewed as a social process, by which expert knowledge related to a policy problem is organized, critically and objectively evaluated, integrated and presented, normally in documents, to inform or guide policy choice or other decision-makers. Assessment processes should be viewed to be as important as the final outputs" (Watson & Gitay 2004: 11).

While Polanyi was aware of the importance of personal judgments and social constructs in scientific activity, in terms of governance he advocated for a strong distinction between science and society. However, in the 50 intervening years the work of social constructivist scholars – mostly from science studies and political sciences – has contributed to modify significantly the way we think about the relations between science and society and about the nature of expertise. The authority of experts

[1] Compare with the pursuit of the past (history) as it really happened – "wie es eigentlich gewesen" Leopold von Renke.

involved in GEAs cannot be established without considering their societal dimension. In other words, drawing a sharp boundary between science and society – that is, adopting a linear model of expertise - does not increase the public authority of expertise.

With regards to GEAs, the concept of "boundary organizations", developed from the idea of boundary objects (Star & Griesemer 1989), can prove particularly fruitful. Such organizations should meet three criteria:

> "First, they provide the opportunity and sometimes the incentives for the creation of boundary objects and standardized packages; second, they involve the participation of actors from both sides of the boundary, as well as professionals who serve a mediating role; third, they exist at the frontier of the relatively different social worlds of politics and science, but they have distinct lines of accountability to each" (Guston 2001: 401).

This concept emphasizes that experts involved in GEAs have to deal with multiple lines of accountability; that is, they have to be both scientifically and politically credible, and across a multitude of social worlds. This means that the nature of science and the role of experts in GEAs is not purely epistemic: GEAs don't aim at revealing "the truth", but rather at producing "serviceable truths" (Jasanoff 1994). One of the main approaches proposed by STS scholars to take into consideration the interactions between natural and social ordering is the co-production framework. Calling for the development of an idiom of co-production, Jasanoff suggests that "in broad areas of both present and past human activities, we gain explanatory power by thinking of natural and social orders as being produced together" (Jasanoff 2004: 2). In such approach, science and policy are not perceived as two realms independent from one another but rather as two deeply intertwined domains that are the result of complex social and historical processes. In this perspective, the production of scientific knowledge cannot be separated from the social context in which it emerges and also produces effects on this context. Here approaching initiatives such as the IPCC or the IPBES as "boundary organizations" makes sense: it allows to draw attention to the processes (or "boundary work") leading to the construction and stabilization of such sites of co-production.

LESSONS LEARNED AND CHALLENGES FOR GEAs

Consistent with the definitions proposed above, practitioners and researchers have identified criteria influencing the success, or the lack thereof, of GEAs. Some key factors of success are listed in Tables 1 and 2. These criteria confirm that GEAs should not be conceived as pure scientific initiatives, but rather as social processes. They suggest that it is essential for GEAs to involve a broad range of actors from across the world and to be demand-driven. From a STS perspective some of these criteria also raise further questions. For instance: where is the limit between policy-relevance and policy-prescription? Or, how to clearly distinguish between risk assessment and risk management? While reflecting on these issues is not the purpose of this paper, the effective implementation of such criteria may deserve more attention: how such discursive distinctions are actually being implemented? Moreover, the context in which GEAs are carried out is also key for understanding why some environmental issues manage to rise to the top of the international agenda, while other issues remain largely ignored.

- Be demand-driven and involve experts and all relevant stakeholder groups in the scoping, preparation, peer-review, and outreach (communication);
- The process must be open, transparent, representative, and legitimate, with well defined principles and procedures;
- The finding and analyses need to be technically accurate and evidence-based, not value-laden
- Be policy-relevant but not policy-prescriptive, i.e. provide options rather than recommendations;
- Cover risk assessments and risk management; and
- Present different points of view that often exist, and whenever possible quantify the uncertainties involved.

Table 1 : Key factors of success according to Watson and Gitay (2004)

- Focus on the process, not the report;
- Focus on saliency, legitimacy, as well as credibility;
- Assess with multiple audiences in mind;
- Involve stakeholders and connect with existing networks;
- Develop influence over time.

Table 2 : Key factors of success according to Cash et al. (2006)

According to Cash et al., the effectiveness of assessments – which is related to their salience, legitimacy and credibility - depends on three major determinants: the historical context (pre-emergence, peak attention and post-emergence), the characteristics of the user (interest, capacity and openness) and the characteristics of the assessment itself (form of the science-policy interface, participation and scope). In the context of GEAs, all these factors are likely to impact the effectiveness, and the authority, of expertise.

This suggests that in the past 30 years, some lessons have been learned regarding the practice of GEAs and new features have been added to assessment processes. For instance, the IPCC voluntarily changed its rules of procedure twice since its creation (in 1993 and 1999). More recently, following errors in the IPCC 4th Assessment Report, the InterAcademy Council (IAC) produced a report proposing some further reforms to make the functioning of the IPCC more open and accountable, and to improve its credibility and effectiveness (IAC 2010).

However, despite these adjustments and a better understanding of GEAs, their authority is still challenged. Several researchers, mostly social scientists, have suggested that the response of the IPCC to its critics might not be the most appropriate. For instance,

> "Even as it reforms its internal procedures and management structures, the IPCC is reluctant to openly address challenges like the demand for public accountability. Although the IPCC does not conduct traditional research but rather produces policy-relevant knowledge, the IPCC establishment still proceeds as if the panel produces primary 'scientific knowledge' generated by traditional scientific research" (Beck 2011b: 8).

This suggests that, contrary to Polanyi's vision of scientific authority – which implies a sharp distinction between the scientific sphere and society, the IPCC cannot be authoritative if it relies only on its epistemic dimension. At stake here is also the limited scope of the IAC review: while it aimed at restoring the credibility of the IPCC and its public trust, most recommendations can be read as an attempt to strengthen the epistemic dimension of the IPCC (e.g. improving the review process to avoid errors, adding more information on uncertainties and confidence scales) and reinforces the so-called "linear model of expertise". The IPCC needs to go beyond this model – associated with the idea that experts have to speak with one consensual voice to be authoritative in front of policy-makers (see for instance: Beck 2011a)– and develop another model of science-policy interactions.

Overall, these critical readings focus mainly on two aspects of GEAs: (1) the fact that such initiatives operate at the science-policy interface and that a better understanding and organization of such interfaces is needed; (2) the fact that, by construction, GEAs seek to be authoritative at the global level, while remaining relevant at the local level. In other words, GEAs have to address tensions that arise from two dimensions: a horizontal one between the domains of science and policy; and a vertical one between local and global (i.e. multiple) scales. While we use the notion of "dimension" for clarity purpose to present our argument, we acknowledge the fact that these are to some extent artificial – both dimensions are not naturally given but are also construction themselves. As mentioned above, the distinction between "science" and "policy" is not self-evident and result from a complex boundary work that is geographically and culturally sensitive. Likewise, we rely on the terms "local" and "global" since these notions are commonly used to describe the varying scopes that GEAs can have but we understand them as being also constructed and somehow problematic. We reflect further on these aspects in the section below. In both cases, these dimensions challenge and affect how GEAs establish and defend their global authority.

PLACE AND GEAs

Drawing upon results from the geography of science and other spatially sensitive political theories, we argue that these two dimensions exhibit tensions which are always geographically sensitive. In other words, "place matters" and this affects both the epistemic and political dimensions of expertise.

First, regarding the horizontal dimension, that is relations between science and policy, several studies have shown that (Western) science is never as objective and universal, or placeless, as it claims to be. As shown by Livingstone (2003), even if scientific theories and knowledge are incredibly mobile and seem to be able to travel all around the world, they can actually never be completely detached from their place of production. This means that science is never "the view from nowhere" (Shapin 1998). What counts as scientific knowledge always varies in space and time and credibility is constructed through different technologies of trust (such as peer-review, professional accreditation, public reputation, etc.).

This also implies that science can never unconditionally speak "truth to power" (Wildavsky 1979) and that the boundaries of "science" are constantly re-negotiated. Following scholars such as Latour and Jasanoff, we understand the separation of "science" and "politics" into two different realms as a culturally-conditioned social construct. Latour (1993: 34) suggests that the divide between science

(or nature) and society is a characteristic of Western societies and that our modern Constitution is actually full of hybrids "whose existence, whose very possibility, it denies". This feature of Western culture, which he describes as a characteristic of modernity, is also emphasized in Descola's study: *Beyond Nature and Culture* (2005). Here, the anthropologist examines relations between nature and human societies in different cultural settings and suggests that there are at least four different ontologies: animism, totemism, analogism and naturalism. The dualism of nature and culture is a peculiarity of Western societies. Since GEAs aspire (and claim) to be global, this raises serious questions regarding the ability of such assessments to embrace different worldviews and knowledge systems while creating and maintaining credibility worldwide (e.g. Filer 2009).

Second, regarding the vertical dimension – that is relations between local and global levels, several studies have stressed problematic aspects related to the "global" aspiration of GEAs. This has been particularly well-documented in the case of the IPCC: for instance the quasi-absence of indigenous knowledge in the IPCC reports (Ford et al. 2012), and the under-representation of experts from non-Annex I countries (e.g. Ho-Lem et al. 2011; Biermann 2001). The lack of participation of experts from developing countries has also been identified as a factor undermining the IPCC's credibility by Bert Bolin, the founding chair of the IPCC. This suggests that the geographical affiliations of experts matter for the authority of GEAs: no matter the content of the final report, if only experts from Northern countries have been involved then the credibility and the legitimacy of the assessment will be affected. Careful attention was paid to this dimension during the realization of the MA: "half of the members-at-large of the board were chosen to represent organizations in developing countries and a significant number of the institutional representatives from UN organizations were also selected in developing countries" (Miller 2007: 346).

The reception of knowledge and its policy relevance also vary in different regional and cultural settings. The idea of "civic epistemologies" developed by Jasanoff suggests that policy-relevance and public trust is geographically sensitive: for instance, ways of making use of science vary greatly between countries such as the USA, the UK and Germany (Jasanoff 2007); or the different roles scientific experts in GEAs take on as domestic 'informational entrepreneurs' (Rowe 2012).

In addition, the risks arising when aggregating knowledge from a multitude of places have also been underlined. For instance, the construction of a global representation of climate change has been identified as a factor hampering the relevance of IPCC knowledge at local levels. Several authors have suggested that this global knowledge paradigm has resulted in a loss of meaning - "scientific assessments such as the IPCC helped establish climate change as a global phenomenon, but in the process they detached knowledge from meaning" (Jasanoff, 2010: 233). The loss of geographical sensibility arising from the attempt to produce "global kinds of knowledge" (Hulme 2010) has also been identified as a problematic dimension of the IPCC's work. Hence, it seems that while the IPCC has managed successfully to construct a global representation of the problem it is meant to address, this does not necessarily translate into policy-relevant knowledge enabling policy interventions at local scales.

These results suggest that place, or maybe geographical sensibility, matters for GEAs for a wide variety of reasons. It matters for (i) the credibility of knowledge – some knowledge systems are credible in some regions and not in others; (ii) the credibility of policy –there is no such thing as a

"one size fits it all" policy response; (iii) public trust – there are different civic epistemologies and trust is a construction which is geographically variable; and (iv) the credibility of expertise in general, i.e. the only generalization that can be made about expertise is that it is always geographically sensitive.

PLACE AND THE AUTHORITY OF EXPERTISE IN THE CONTEXT OF IPBES

If this geographical sensibility has proven to be problematic in the case of the IPCC, it may be even more problematic for IPBES, but for different reasons. Using the determinants identified by Cash et al. and outlined above, we propose three main reasons why IPBES has to develop a particular understanding of authority for the assessment to be credible at a global scale.

First, the historical context in which IPBES has been created is very different from the one in which IPCC was established. As described by political scientist Maarten Hajer, "our mediatized society requires a different, arguably more complicated way of performing politics to be persuasive and engaging; it calls for new political responses and new political repertoires" (Hajer 2009: 4). He suggests that authority now has to be performed in front of multiple audiences and in different places. This implies that for IPBES to be successful, it is important to go beyond the *de jure* authority that has been formally given to IPBES by UN Member States. According to Hajer, a key element of success in a mediatized and digitally connected society is to develop a more relational understanding of authority. In a recent lecture, Hulme also insisted that IPBES needed to be a "product of its own particular time" and acknowledge the plurality of authority structures and social mandates (Hulme 2011).

Second, and consistent with the changing context in which GEAs now have to operate, is the increased appetite of the public sphere for global environmental politics: for instance, the number of side-events organized by NGOs in large set-piece intergovernmental conferences keeps on increasing (e.g. Schroeder & Lovell 2012) and numerous internet blogs scrutinize and deconstruct the work of organizations such as the IPCC (e.g. Schäfer 2012). This increases the public visibility of GEAs and points towards questions relating to participation (Who can participate in such assessments, and how?) and legitimacy (Who is entitled to participate?). This means that the range of formal and informal actors in GEAs is expanding. While the IPCC focused mostly on building amongst accredited scientists a global consensus on climate change to be presented to governments, new constituencies have appeared and are asking to be involved in the assessment process: as primary knowledge producers, as validators, as audience and as users.

Third, the assessment characteristics are changing as well. The object (the "biodiversity crisis") that IPBES is meant to address is much more localized in nature, or at least heterogeneous in character. In the case of the IPCC it has been possible to construct a "global" representation of climate change by means of global scientific and policy indicators, such as, respectively, the global mean temperature index and the 2°C target (e.g. Cointe et al. 2011) (although, increasingly, popular representations of climate change are emphasising local weather extremes and regional phenomena such as Arctic sea-ice and Himalayan glaciers). In contrast, for biodiversity, there is no obvious global indicator: the "biodiversity crisis" has a strong local component and it cannot be reduced to a single global indicator. Neither does biodiversity lend itself to comprehensive modeling by hegemonic

Earth System models. For instance, in contrast to the IPCC, which has first focused on the production of assessments with a global scope, initiatives such as the Millennium Ecosystem Assessments have developed the practice of sub-global assessments. Besides, some types of ecological knowledge are embedded in particular sites and cultural knowledge systems and cannot be easily "detached". For this reason, biodiversity-related knowledge calls for new modes of knowledge validation and this constitutes a challenge for IPBES since placeless (or universal) knowledge has often been associated with high credibility (e.g. Kohler, 2002).

This points towards a paradox and an essential question for IPBES. The world appears to be more and more connected by means, *inter alia*, of the internet and new social media. Yet it seems that rather than facilitating the emergence of a global vision for the future - or maybe a feeling of global citizenship - this is also reinforcing a sense of place and particularity (see for example Heise 2008). Geography matters more than ever. Instead of dissolving boundaries, this interconnectedness does not necessarily allow "the global" to make intuitive sense for people: emotional and epistemic attachments remain placebound. In contrast, the IPCC has sought to establish its global authority by focusing on consensus (a response associated with the linear model of expertise) instead of encouraging plurality (see Hulme, 2013) and by constructing, *inter alia*, global indicators that turn out not to make any sense to people (Hulme, 2010). They cannot be experienced directly nor can they unambiguously be used in decision-making: for instance, given uncertainties about the climate sensitivity, the '2°C target' hugely underdetermines what emissions reductions are in fact necessary; and in any case, what does 2°C mean for the distribution of responsibilities among State actors? For these reasons, the vision of climate change that is pictured in some of the work of the IPCC can be described, paradoxically, as "placeless". The IPCC has thought to assert its authority by looking for more "placelessness" – that is by constructing a global knowledge paradigm and by promoting a consensual vision of climate change.

In recent years, several scholars have insisted on the need to develop more deliberative and collaborative forms of expertise to increase the credibility of GEAs (Beck 2011; Koetz et al. 2011; Cash et al. 2001). For instance, regarding the institutional design of IPBES, several authors recommended that IPBES adopt a distributed structure and operate as a network of networks and not as a centralized institution. The need to move away from the global focus and from the drive for consensus, as for example adopted by the IPCC, has been underlined by both practitioners and researchers (e.g. Turnhout et al. 2012). The importance of recognizing this geographical sensibility seems to have been acknowledged by IPBES since one of the guiding principles of the platform is "recognizing regional contexts". One of the key question here regards the relation between regionalization and democratization: while such *international knowledge institutions* have been criticized for not being democratic enough in their functioning, regionalization has also been thought as a strategy to allow more bottom-up and participative approaches in GEAs (see Miller 2007; Miller & Erickson 2006). To which extent can regionalization and democratization actually work together? This also points towards questions regarding the ability of IPBES to learn from the experience of previous GEAs – from the IPCC in particular- and to be more institutionally reflexive.

However IPBES is still at an early stage and we argue that developing a "placeful" form of expertise remains a great challenge for the credibility of the platform. How can IPBES invent a way to be

authoritative at a global scale if place matters so much? A geographically sensitive understanding of authority is needed to describe how place affects the epistemic and political dimensions of expertise.

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