Chapter 26

Successful joint knowledge production: beyond credibility, saliency, and legitimacy

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Abstract

Joint knowledge production (JKP) is a process in which scientists and policy makers collaborate in order to develop results that are relevant to both. In this chapter we discuss factors that are considered important for successful JKP: credibility, saliency, and legitimacy[57]. We explain that the interpretation of these concepts is inherently normative and we present Cultural Theory as a method to render different interpretations of these concepts explicit. Even after differences have been made explicit, however, JKP cannot be considered a spontaneous process; additional efforts from scientists and policy makers remain necessary for success.

[57] This chapter is based on the INSPIRATOR project that was funded by NWO and KvK and implemented by ICIS in collaboration with Utrecht University, YM de Boer Advies and Femke Merkx Kenniscocreatie. The goal of the project was to delineate conditions for successful joint knowledge production, based on an evaluation of joint knowledge production projects in the Netherlands in the area of climate adaptation.

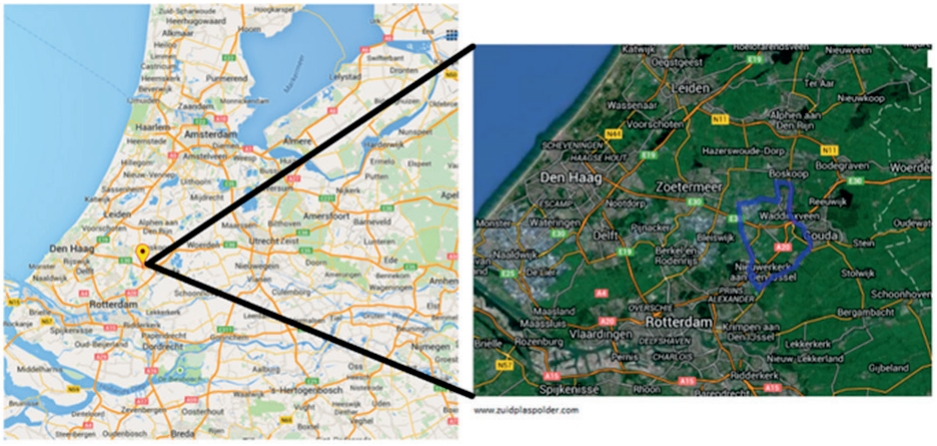
26.1 Introduction

Several approaches to achieving fruitful links between science and policy have been discussed in the literature (see Hoppe, 2005, 2011; Pielke, 2007; Pohl & Hirsch Hadorn, 2007; Scholz & Marks, 2001) and implemented in practice. One of these approaches involves the concept of joint knowledge production, or to use its acronym, JKP (see Hoppe, 2005; Pohl & Hirsch Hadorn, 2007; Regeer & Bunders, 2007; Van Buuren & Edelenbos, 2004 for more information). JKP can be defined as a process in which scientists and policy makers collaborate in order to develop results that are relevant to both (Hegger et al., 2013; Hegger et al., 2012). It is said to lead to better, more policy-relevant or socially robust knowledge, to enhance mutual understanding, to enable parties to understand each other's language; and to do justice to different forms of knowledge (Hegger et al., 2012; van den Hove, 2007).

Following Cash and others (2003), a project can only be considered successful in terms of JKP if all project members agree that the knowledge produced is credible and salient and that the knowledge production process was legitimate. Credibility concerns the scientific appropriateness of evidence and arguments (Cash et al., 2003) which involves building upon the existing literature and theories and developing verifiable and reproducible empirical research. Saliency refers to the relevance of the knowledge produced to decision makers. The knowledge produced should thus be considered useful and important. Legitimacy reflects the perception that the production of the knowledge has been fair, unbiased, and respectful towards different values and beliefs of stakeholders (see Cash et al., 2003; Hegger et al., 2013 for more information). In reality, as we learned in the INSPIRATOR project, project members may have different interpretations of these three concepts, and we therefore argue that credibility, saliency, and legitimacy are inherently normative. Different, diverging interpretations of the concepts may exist within a project team. The fact that these interpretations may differ does not mean that some are more correct or desirable than others: all interpretations are valid in themselves. However, to achieve successful JKP, all members need to agree that the project meets their specific interpretations of credibility, saliency, and legitimacy. This implies that the different interpretations of these three concepts have to be made explicit during a project, which is however easier said than done.

Box 26.1 An example of a JKP project: Waarheen met het Veen?

The project "Waarheen met het Veen?" (translated: "What to do about the peatland?") aimed at a climate-proof design for the Zuidplaspolder, which is the lowest-lying location in the Netherlands (6.7 m below sea level). In response to strong (safety-related) objections to design plans including the construction of housing and business areas in the low-lying Zuidplaspolder, one of the Dutch ministries appointed the area a "Hotspot": a location where scientists, policy makers and practitioners work together. At Zuidplaspolder, actors from universities, the Zuid-Holland provincial authorities, the district water board of Schieland and Krimpenerwaard, several advisory agencies, and contractors all worked together in an innovation lab that was run in parallel with the (debated) regular planning processes. Two people were simultaneously involved as members of the innovation lab team and the regular planning process team. One of them was assigned the role of the innovation lab's ambassador to communicate results to other officials. During the project, the innovation lab collaborated intensively with several partners, including project agencies, the water board, environmental organisations, and universities. The innovation lab performed 3 types of research: investigating the potential consequences of climate change for the Zuidplaspolder, designing options for a climate-proof design of the polder and a societal cost-benefit analysis for selected options. The project concluded that the existing plans sufficiently considered the possible impacts of climate change. In a response to this conclusion, the responsible minister, Jacqueline Cramer, set aside 24 million euros for a climate-proof design of the Zuidplaspolder.



Location of the Zuidplaspolder in the province of Zuid-Holland

26.2 Perspectives on credibility, saliency, and legitimacy

Just as people have different perspectives on the ability of nature to deal with stress (Schwartz & Thompson, 1990) and the role of governments in counteracting environmental degradation and fostering wellbeing, people may have different perspectives on what credible and salient knowledge is and what a legitimate knowledge production process looks like. Cultural Theory (Douglas, 1970; Thompson et al., 1990) is an empirically validated typology that allows one to differentiate between various interpretations. Although Cultural Theory was initially developed to classify, analyse, and interpret the behaviour of communities according to their (religious) rituals (Douglas, 1970), it has been applied to a diversity of topics, including nature and resources (Thompson et al., 1990), uncertainty and risk (Rayner, 1992; Renn, 1992; Rotmans & de Vries, 1997; van Asselt, 2000), problem structuring (Hoppe, 2011), energy (Janssen & de Vries, 1998), and water (Hoekstra, 1998; Middelkoop et al., 2004; Offermans, 2012). Cultural Theory distinguishes four stereotypical perspectives, each of which can be defined as consistent interpretations or "Perceptual screens through which people interpret the world and which guide them in acting" (van Asselt et al., 2001), viz. hierarchism, egalitarianism, individualism, and fatalism. Applied to knowledge and knowledge production (see Hegger et al., 2013), a hierarchist would differentiate strictly between scientific knowledge and other types of knowledge like tacit or practical knowledge. The analysis of problems should be deferred to scientists using structured, validated, and proven research methods. They believe that good scientists are able to determine the causes of problems and to evaluate policy options in a non-partisan way, and that normative discussion should be prevented. Egalitarians acknowledge and appreciate different forms of knowledge and consider science to be fragmented and constrained by disciplinary focus and methods. Gaining knowledge and translating it to feasible interventions can never be value-free, as it involves choices about what matters. Egalitarians want knowledge to be subjected to extended peer reviews and dialogues, also outside the academic context. Individualists are pragmatic, strategic, and opportunistic. Scientific knowledge differs from other knowledge types, but is not necessarily better, or more complete. For some projects, practical knowledge may even be sufficient. A good scientist is pragmatic, and as a result, not all research results will be equally objective or independent. Everybody has their own responsibility to carefully select and evaluate knowledge and information. Collaborations between scientists and policy makers offer opportunities for self-development, creativity, and networking. Finally, fatalists attach equal value to scientific knowledge and other knowledge sources. They believe that the political agenda determines the content and results of scientific research. Collaboration between scientists and policy makers can be interesting, but conflicts (once manifest) are mostly unsolvable.

26.3 Operationalising perspectives on knowledge production

To visualise and operationalise different interpretations of credible and salient knowledge and legitimate knowledge production, we developed the so-called Perspectives Map (Table 26.1). The second column presents topics that are considered important for credibility, saliency, and legitimacy (first column). Columns 3-6 present the different perspectivistic interpretations of the topics.

Table 26.1 An operationalisation of different perspectives on credible and salient knowledge and legitimate knowledge production processes.

	Hierarchical	Egalitarian	Individualistic	Fatalistic
Credibility				
Scientific peer review (of articles reporting on research results)	Is a good and valid method to safeguard quality	Works well in strictly demarcated and disciplinary research fields	Over-values the scientific use of knowledge and is too disciplinary	Is mainly a matter of nepotism
Testing of scientific results by people outside academia	Is sometimes necessary to gain or preserve public support	Is necessary to involve marginalized groups and to test knowledge claims	Is often time-consuming and hardly contributes anything	Gives external people an unjustified feeling that their assumptions are taken seriously
Value-free science	Can be ensured by following valid and proven research procedures	Can never be fully ensured, so it is important to be transparent	Is an illusion, but not necessarily a problem	Everybody will try to focus on their own fads and fancies; control hardly helps
An ideal scientist	Is a pure scientist who performs research independent from the political context	Is a scientific referee who creates trust and legitimacy by starting a dialogue (also with people outside the scientific community)	Is a scientific advocate who promotes certain choices based on research	Is a scientific broker who provides a balanced overview of all options and possibilities
Distinction between science and other knowledge sources	Procedures and skills make scientific knowledge fundamentally different from other knowledge sources	Scientific knowledge and other knowledge sources are fully complementary	The choice between scientific knowledge and other knowledge sources depends on the topic at hand	There is no fundamental difference between scientific knowledge and other knowledge sources

	Hierarchical	Egalitarian	Individualistic	Fatalistic
Saliency				
Most important role for science	Offering empirical and validated data	Contributing to social learning and communication	Providing insight into complex problems	Depends on context and time
Science's contribution to policy lies in	Offering solutions to problems	Identifying problems	Offering knowledge that allows policy makers to solve problems	Answering policy questions
Influence of science on policy	More science leads to better policy	Synergetic relations result in reciprocal advantages; science and good policy go hand in hand	More science does not automatically result in better policy. Sometimes other knowledge sources are even more useful than science	More science leads to more uncertainty
Most important output in boundary projects	Publications	Gaining shared and useful knowledge	Career opportunities and self-development	Valuable experience
Legitimacy				
Interdisciplinarity (collaboration between scientists from different academic disciplines)	Brings us closer to understanding complex issues	Is inherently risky and possibly even an illusion because of differences in power and status	Broadens the horizon too much; impossible to keep an overview; differences between important and unimportant things fade	Is a trick to never claim the truth, or a reason to blame when making mistakes
Scientists and policy makers (and the differences between them)	Are complementary, but only the scientist knows how they complement each other	Are subordinate to the willingness to collaborate and personal characteristics	Keeps partners in a project attentive	Are unbridgeable and often conflicting
Influence of policy on science	Collaboration between scientists and policy makers is often at the cost of scientific quality	Collaboration between scientists and policy makers benefits social relevance; it leads to synergies	A good scientist will not be influenced by pressure from politics	The policy agenda determines the output and direction of science to a large extent
Problem solving	Demands more insight into the complexity of societal problems	Demands more insight into unequal power distributions and listening to marginalized groups	Demands creativity	Demands patience and a bit of luck

	Hierarchical	Egalitarian	Individualistic	Fatalistic
Stakeholder input	Is often one-sided. It is good to put this in a broader perspective with the help of scientific knowledge	Is complementary to scientific knowledge, but too often neglected; more and better inclusion of stakeholders in scientific research would lead to more feasible policy	Depends on topic and goals; it may be efficient and necessary, but may also lead to unnecessary delays	Science is one of the stakeholders that may be involved in a project; knowledge from other sources is equally relevant

26.4 Towards more successful JKP

How could different interpretations of credibility, saliency, and legitimacy hamper the success of a JKP process? Let us try to explain this by using the example of "testing scientific results by people outside academia" (third row in Table 1). The first question is whether testing research results outside academia is considered important or necessary to develop credible knowledge (hierarchism and egalitarianism) or whether it is interpreted as a way to fool people or a waste of time (fatalism and individualism). Even when project members implicitly or explicitly agree that testing research results outside the scientific ivory tower is necessary, successful JKP is not yet guaranteed. People may hold different views and expectations regarding the role of these tests within the project. Hierarchists will mainly emphasise the instrumental benefit of testing results outside academia, which may be necessary to preserve social support. Egalitarians on the other hand will expect the tests to offer valuable information that – in order to develop credible knowledge – needs to be fed into the knowledge development process again. Ignoring these differences runs the risk of members becoming dissatisfied and even disappointed with the knowledge produced, seriously hampering the success of the JKP process. In the above example, the knowledge produced will not be considered credible by an egalitarian if the testing procedure is only used in a hierarchical way to preserve support. An attempt at rendering the different interpretations (and the accompanying expectations) regarding knowledge and knowledge production explicit is given in Table 1, which offers an interpretative assessment based on Cultural Theory, to be scrutinised empirically. It should be stated that the aim of Table 1 is not to force people to agree on any interpretation of any topic. We actually believe that the interaction between different perspectives is useful, enriches the knowledge production process and increases the robustness of its outcomes. For this to happen, it is important that people become aware of each other's knowledge and perspective. Table 1 may help to enhance this transparency.

26.5 Other relevant preconditions for successful JKP

Although the above explanation of interpretations of credibility, saliency, and legitimacy may contribute to more successful JKP, it is by no means enough to guarantee success, as many more factors play important roles. The INSPIRATOR project (Hegger et al., 2013; Hegger et al., 2012) combined a literature study with interviews to explore, unravel, and better understand conditions contributing to successful JKP. The interviews were performed with people who had had experience of working in JKP projects as scientists, program managers, decision makers, or funders. Seven success conditions were derived from the literature and verified by the interviews (see Hegger et al., 2012 for more information):

1. Involve as many actors as possible. In an ideal situation, all crucial parties are involved in a JKP process. However, as large group sizes may negatively affect the manageability of projects, the aim is to involve as many stakeholders as necessary, and as few as possible.
2. Pay sufficient attention to joint problem structuring. Different interests or perceptions regarding the core of the problem may result in "jumping to solutions" too fast, hampering the success of JKP.
3. Find and elaborate joint frames, for example via "boundary object" that enhance and facilitate communication between different groups; they help to create "common ground" while still allowing different ways of defining a phenomena or giving meaning to it. The idea of a climate-proof design can be considered a boundary object in the case study described in box 1.
4. Transparently position your research project in terms of its orientation and organisation. It should be clear at the start of a project to what extent it is oriented on scientific knowledge development and/or policy development.
5. Be explicit (particularly as a scientist) about your role. It is generally agreed that scientists are supposed to do research and should not engage in (political) decision making, whereas policy makers have to take responsibility for making decisions based on their interpretation of research results (Pielke, 2007). Of course, role divisions in JKP processes are not always clear-cut (Pielke, 2007). Nonetheless, transparency about roles is believed to foster success.
6. Anticipate on reward structures that impede successful JKP. Successful collaborations and successful JKP are generally not considered criteria to evaluate the performance of scientists or policy makers. Of course, this condition can hardly be met by project members themselves, as it refers to more institutional obstacles towards successful JKP. It would require contextual solutions like making funds available for JKP, or the development of new performance indicators based on valorisation.
7. Manage facilities that encourage knowledge exchange. This might involve including independent knowledge facilitators (or knowledge brokers), providing suitable

venues to meet, and using the correct methods and techniques to stimulate creative thinking.

26.6 Conclusion

Collaboration between scientists and policy makers may result in knowledge that is publishable in academic top journals and applicable to practice. This is not, however, a spontaneous process and requires additional efforts from scientists and policy makers. The process of joint knowledge production (JKP) is considered successful if all actors recognise the knowledge produced to be credible, salient, and legitimate. The Perspectives Map presented above (based on Cultural Theory) may contribute to rendering the different interpretations of credibility, saliency, and legitimacy explicit in order to do justice to different interpretations of the three concepts. Subsequently, continued efforts are needed to maintain roles, interests, problem definitions, possible solutions, and pathways to these solutions as subjects of discussion. The role of all members – in particular scientists – needs to be transparent at all times. Finding a healthy balance between being involved as a project member and keeping one's distance as an honest broker is not always evident and is best made explicit. The Perspectives Map offers a way to do this.

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