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INTRODUCTION

The theory and practice of joint fact-finding

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Beyond adversarial science

When authors set out to write or edit a book, they should have a clear and compelling answer to the question of *why their work is important*. That is, what contributions can it make in a world with thousands of books, articles and other sources of information. To us, editing a volume on joint fact-finding (JFF) was both an exciting opportunity and a project long overdue. Great writing—much of it by those that contributed to this volume—is out there, and the practice of JFF is steadily increasing in the world of public sector dispute resolution. However, there has not been a single volume that has pulled together various luminaries in the field to comprehensively illustrate the state-of-the-art in JFF, and point towards some of the important issues and debates that both practitioners and scholars are grappling with. This is our humble attempt to do that.

This book is intended for a wide audience. For the practitioner or student less familiar with JFF, it introduces the approach and how it is applied. For practitioners and scholars well versed in JFF, various chapters provide both a contemporary snapshot of best practices and some fresh insights from important thinkers in this space. For technical experts and other knowledge providers looking for ways to work with stakeholders and provide information that is both useful and widely accepted, it aims to present an alternative. For mediators, facilitators, and other practitioners that work with multi-stakeholder groups around public policy challenges, it introduces a better way to resolve fact-focused disputes. The book is designed to be a tool for practitioners, scholars, and students.

Another question that deserves attention up front is *why do we need this kind of process?* That is, what can JFF offer that other approaches are not achieving? This question is explicitly and implicitly addressed in various ways throughout this volume. In the widest sense, JFF is an invaluable method for moving beyond

adversarial, biased, misunderstood, and misapplied (quasi-)scientific discourses to arrive at a set of facts that are practically useful for multi-stakeholder groups engaged in collaborative decision making.

The days of rationalist scientific management and deference to official data are behind us. The credibility of experts and the information they provide are regularly challenged; officials are routinely provided with conflicting sets of “facts” as they plan and make decisions; and decision makers and stakeholders alike are largely skeptical that technical information will adequately account for the various interests and concerns and lead to the right outcomes (Karl et al. 2007). In addition to government and industry bodies, non-governmental organizations (NGOs) and civil society movements have substantially increased their influence over the last fifty years by developing their own scientific capacities. NGOs and grassroots organizations have successfully challenged governments and industry by demonstrating their failures in taking other concerns into account.

Decision makers and stakeholders often find it challenging to translate technical information into terms that are useful for planning and policymaking, while scientists feel misunderstood and ignored (Adler et al. 2011). Competing sets of scientific and technical information are routinely marshaled to support the cases of different stakeholder groups, leading to arguments around which set of facts should be used. The practice of citing only favorable evidence is often criticized as “cherry picking” (Slob and Staman 2012). Incomplete understanding and contention around “the facts” contributes to stalemates (Karl et al. 2007). Meanwhile, political decision makers are increasingly pressured to realize evidence-based policy (Slob and Staman 2012) and sound science in policymaking (Sunstein 2002).

Conflict and misunderstanding seem to all too frequently take over when stakeholders debate how to interpret and respond to scientific and technically intensive issues. Adler et al. (2011) identify six key challenges in the “science-policy-citizen” interface: Communication issues and misunderstanding between scientists and other stakeholders; conflation of scientific and policy questions; epistemic and communication issues among scientists; ascertaining the salience and relevance of information; different risks and risk tolerance; and issues of objectivity and arrogance.

Science communication has been advanced as a way to ameliorate the general malaise around the veracity of any given set of facts for decision making, increase the salience of technical information (Bucchi and Trench 2008), more effectively communicate risks (Plough and Krinsky 1987), and increase public understanding of science (Royal Society 1985). Effective communication is surely important, but is not the full solution. Decision-makers and other stakeholders are often struggling with technical information not because they do not understand or receive it, but because they are confronted with competing information and are increasingly inclined to question what they are given. The challenges identified above go beyond misinterpretation.

In the spirit of postmodernism, one might argue for a turn away from technical information. Rather than looking to facts, we may discount them as inherently

biased and worthless red herrings in the foolish pursuit of non-existent truth. Yet, decisions must be made and, objective truth or not, the importance of data to decision making seems unlikely to subside. Despite the fallibilities, decision makers and stakeholders are likely to continue to rely upon technical information.

This leads to a conundrum: How do groups looking to plan and make decisions in any number of areas—from land use to public health—wade through the imperfect and often contradictory information they have to make fair, efficient, wise, and well-informed choices (Susskind and Cruikshank 1987)? While public participation and consensus building programs have been adopted extensively in order to resolve environmental disputes, they do not necessarily attend to the challenges of dueling science in political discourse. JFF offers an alternative to adversarial science, and a way to enhance the use of technical information in decision making (Ehrmann and Stinson 1999). It seeks to integrate natural science, social science, and the various interests and priorities of stakeholders by involving them in: collectively identifying research questions; engaging experts that they all trust to help them apply the methods and find the data that they need to answer questions; and collectively ascertaining and receiving the products generated (Karl et al. 2007). This brings us to the last question we aim to answer in this introductory chapter, before moving on to outlining the rest of the book: *What exactly is joint fact-finding?*

What is joint fact-finding?

Rather than each stakeholder group marshaling the facts that best advance their respective interests and perspectives while discrediting the contradictory facts others provide, joint fact-finding (JFF) challenges groups comprised of stakeholders with *different interests* to collaboratively generate shared information that all parties can accept and find useful for their decision making (Adler et al. 2011; Ehrmann and Stinson 1999). Stakeholders focused on a particular problem or proposal are brought together to collectively:

- define their information needs (i.e., the data that would help them to make the best possible decisions);
- translate these needs into research questions;
- partner with technical experts that are widely trusted and seen as legitimate to devise and conduct a research program; and
- jointly receive the results and consider the implications on the questions at hand.

JFF is typically a structured and professionally facilitated process that calls upon stakeholders and technical experts to work together not out of altruism, but as a means to advance their debates and generate outcomes that all parties find acceptable (Adler et al. 2011; Karl et al. 2007). JFF efforts are often extensions of consensus building or other forms of collaborative decision-making processes (Ehrmann and Stinson 1999). JFF alone will rarely provide *the answer*, as parties will still have

different priorities, risk tolerance and so on, but can at least help them to move beyond the facts and engage in interest-based deliberation with a largely shared set of information.

It's hard to determine the first case of JFF, but one of the first scholarly accounts is from Ozawa and Susskind (1985), which discusses multiple approaches to managing science-intensive disputes, including JFF. In 1984, MIT Professor Lawrence Susskind was invited by The New York Academy of Sciences to facilitate a public dialogue on the risks associated with emissions from a proposed waste recovery plant (i.e., incinerator) in Brooklyn Navy Yard. Experts from both sides—those for the proponent saying it is safe and those for the opponent stressing possible health risks from dioxins—were invited and asked to explain the assumptions behind their analyses and conclusions. Through this public process, decision makers and other stakeholders came to understand how differing assumptions lead to different assessments of the risks. While there may have been preceding occasions in which assumptions and models were questioned and deliberated as means to resolving science-intensive disputes, the Brooklyn Navy Yard case was clearly an early example of JFF.

JFF processes must be specifically tailored to each context. An important distinction is between processes that are standalone efforts, organized explicitly as fact-finding exercises, and those embedded within larger collaborative efforts to seek consensus around policy and planning matters. Some assert that a direct link to policymaking is critically important (Karl et al. 2007). Others see value in JFF efforts that aim to inform policy debates, but may do so less directly by elevating the discourse among key stakeholders while remaining separate from policymaking forums (Adler et al. 2011). Whether embedded or standalone, Figure 1.1 outlines a general set of steps that are typically important to success.

The first step is to ascertain that there is in fact a scientific or technical issue, or issues, that all parties feel it would benefit them to know more about for the purposes of their decision making. Parties may feel that they already possess the information they need, but nonetheless see a collaborative fact-finding process as valuable because it will help to put everyone on the same page. The assessment should also ascertain whether or not JFF is likely to help parties move closer to resolving their issues. As with collaborative decision-making processes in general, JFF requires some interdependency to motivate parties to engage, and the involvement of all the various stakeholder groups (Schenk et al. 2016a). It typically behooves a proponent to hire a professional neutral to conduct the assessment (Ehrmann and Stinson 1999). This step is typically less pronounced when JFF is conducted within a wider consensus-building effort.

The second step is to convene a process that brings the stakeholders together, if they are not already. Processes are typically initiated by convening agencies or other key stakeholders that see benefits in engaging others more systematically in fact-finding. Here too a neutral facilitation team can play important roles, helping the group to draft their work plan and establish the responsibilities, expectations, and ground rules for all involved (Karl et al. 2007). Even if the group is already

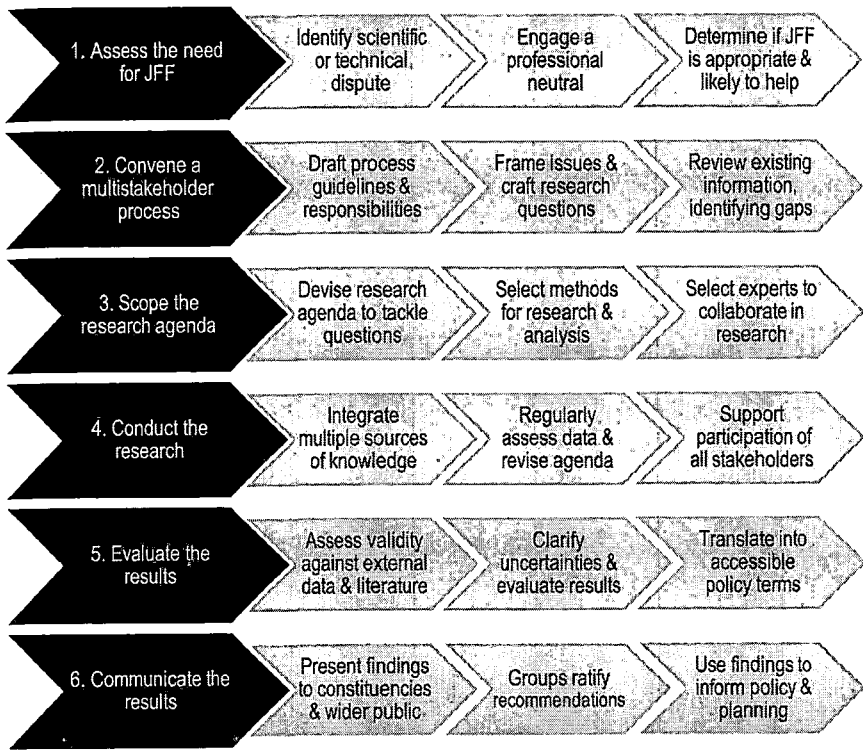


FIGURE 1.1 Steps in the joint fact-finding process.

Source: Adapted from Consensus Building Institute, 2011.

engaged in a collaborative effort, it is important to explicitly discuss how the JFF component will be convened. This convening stage serves to more clearly frame the issues and translate them into research questions, and identify what is and is not already established in preexisting research.

Once the group has convened and research questions have been identified, the next step is to scope the research agenda. This involves identifying which methods might be used to tackle the research questions, and which experts might be engaged to apply those methods. Participants can and often do participate directly in the research process, but typically engage domain experts because of the technical complexities involved. In many cases, one external expert is not sufficient—given both the breadth of information required and desire to enhance legitimacy by listening to various voices—so a ‘panel of experts’ is engaged (Ehrmann and Stinson 1999). JFF efforts are typically multidisciplinary and integrative, engaging various disciplines and experts to consider research questions from various perspectives (Adler et al. 2011). Whether engaging one or many experts, the selection process is critical; the group should devise and apply clear criteria for selection, ensuring that all stakeholders are happy with both the methods and experts chosen.

Scoping an appropriate research agenda is key, but success is ultimately contingent on how it is conducted. Experts and other stakeholders must find ways to monitor and hold each other to account, and be prepared to revise the agenda as the situation evolves. This requires ongoing and responsive relationships, and the active participation of all involved. Groups must also find ways to integrate the various data collected from disparate sources (Adler et al. 2011). This includes different types of knowledge and information that may not comply with conventional scientific norms of validity, but provides critically important insights based on local knowledge and lived experience. While focused on fact-finding, processes should not lose track of the values and interests held by the various stakeholder groups, as the data generated will be vetted through and must ultimately be reconciled with them (Karl et al. 2007).

Once research and data collection have concluded, the process enters the evaluation phase. It is noteworthy that—as discussed in the chapters in this volume by both Scarlett and Courtney (Chapter 8) and Schenk (Chapter 7)—processes can engage in cycles of iterative and adaptive JFF in which they loop back to conduct further research, rather than it being a linear process as described here. Groups can verify the veracity of their findings by seeking external expert evaluation and/or comparing to preexisting research. Some supplementary research may be necessary to clarify issues that remain unanswered or ambiguous. Regardless of how comprehensive the research, some uncertainties are sure to remain; they should be explicitly identified, and sensitivity analysis may be conducted to assess their implications. An important part of the evaluation phase is translating the scientific and technical information gathered into formats that are both accessible to all stakeholders, and useful for planning and decision making. As Karl et al. (2007, 23) put it, the knowledge generated should be “technically credible, publicly legitimate, and especially relevant to policy and management decisions.” The chapter in this volume by Czaika, Rumore, and Schenk on evaluation (Chapter 12) identifies various criteria that may be applied to assess JFF efforts, including the *salience*, *credibility*, and *legitimacy* of the information generated (Cash et al. 2003).

JFF is practically oriented, making the final step of communicating the results all-important. Those involved in JFF must find effective ways of presenting the findings to their respective constituencies and the wider public such that they find it equally salient, credible, and legitimate. Ideally, the various groups that directly or indirectly participated in the JFF process will sign off on the findings, and ratify any recommendations. Whether or not the JFF effort is directly connected to a wider planning or policymaking process, the objective is to generate information that not only *can* but *does* inform those processes. The precise impact of JFF can be hard to evaluate, but, as discussed throughout this volume, the goal is to provide information and instigate problem-solving relationships that will help stakeholders to move closer to reaching consensus around how to resolve issues that involve scientific and technical complexity.

At this point, the advantages of JFF should be clear, but to reiterate, it can help groups to devise common knowledge and understanding; use that information to

generate better, more creative and more durable agreements; and improve relationships (Ehrmann and Stinson 1999). It is important to note that these benefits are not exclusively utilitarian. JFF has *instrumental* value in that it can help multi-stakeholder groups to more effectively and efficiently advance their decision making, but it also has *cultural* and *democratic* value insofar as it fosters cultural norms and legitimizes multi-stakeholder engagement in research, analysis, and decision making (Schenk et al. 2016b).

JFF may be more or less appropriate in different situations. It is most useful when there are disagreements about information; low levels of trust among participants; the effort can complement wider decision-making processes; and the necessary resources are available (Ehrmann and Stinson 1999). It is less appropriate when there are significant power imbalances among stakeholders; a process cannot be appropriately convened; and/or JFF cannot be integrated with existing decision-making processes. These conditions and challenges suggest various obstacles JFF efforts typically face that, while surmountable, deserve attention, including (Adler et al. 2011; Ehrmann and Stinson 1999; Karl et al. 2007):

- lack of institutional champions willing to support and sanction processes;
- getting stakeholder groups involved, with empowered and active representatives from each;
- selecting a professional neutral that has the competency and support from all stakeholders to help design and manage a good process;
- selecting experts and devising a research design that all other stakeholders will accept;
- keeping everyone, including scientific and technical experts, engaged in the process;
- substantial differences in knowledge and background among participants;
- finding the resources, including time of all involved, required;
- inconclusive results and uncertainty around when to stop researching;
- significant differences in interpretation even when the findings are widely accepted;
- persistence of adversarial relationships;
- concerns that JFF will involve inappropriate compromise; and
- failure of follow-through, with results not translating into planning and decision making.

Many of these obstacles reflect challenges in establishing the “institutional frameworks”—particularly within the government agencies that are often the most appropriate conveners—necessary to support JFF and engage stakeholders (Karl et al. 2007). However, the cases documented throughout this volume and elsewhere in the literature suggest that there are reasons to believe that these challenges can be overcome such that JFF provides substantial value.

Last but not least, it is important to acknowledge that JFF alone rarely resolves disputes. The correct policy response is seldom obvious because stakeholders go

through a fact-finding process. However, JFF can help groups to coalesce around a set of facts and enhance their collaborative capacity and relationships, moving them closer to resolving their scientific and technically intensive disputes.

This book: the promise and performance of joint fact-finding

We conclude this chapter by introducing the rest of the book. We are fortunate to have an excellent set of contributions from a wide variety of practitioners and scholars deeply engaged in both facilitating and examining JFF processes. This book intentionally draws from different voices. Some take a more practice-oriented perspective, drawing directly from their experiences to suggest how best practices are evolving. Others apply more theoretical lenses to contextualize what is happening in JFF efforts. Each chapter takes a unique perspective on JFF. While many of the cases discussed are based in the United States, those drawn from Mongolia and Japan provide some sense of how JFF is being applied elsewhere in the world. These summaries are provided to give you a snapshot of the book, but we encourage you to delve deeper into the chapters.

Chapter 2 Joint fact-finding: process and practice

Susskind, Field and Smith draw on their extensive experience with JFF to provide a more thorough introduction to what it is and how it works in practice. They situate JFF within a historical and cultural context, and elucidate on the value it can add. They introduce a step-by-step approach to JFF that (unsurprisingly) looks very similar to that introduced in this introductory chapter, but expand upon it. For example, they provide greater insight into why those interested in convening a JFF effort should strongly consider retaining a professional neutral, and what that neutral can do. More importantly, they bring the six-step process to life by illustrating it with an example from their own work—a process involving nomadic herders and other community members around a large gold and copper mine in Mongolia.

Chapter 3 Towards a more humble inquiry: the practice of joint fact-finding

Adler situates JFF within the wider context of science-intensive disputes, while concurrently using a case he managed around geothermal energy in Hawaii to illustrate key points. He identifies six major barriers to consensus that often emerge: communication challenges; the conflation of science and policy questions; the difficulties associated with interdisciplinary sense making; the challenges associated with finding the most relevant and salient information in a sea of data; the different risks different stakeholders face; and arrogance among scientists and other experts.

Adler outlines an approach to JFF, and identifies an important distinction between efforts embedded within wider decision-making processes, and those done as stand-alone efforts. His Hawaii case demonstrates that JFF can help groups get a better, shared sense of “the facts,” but various caveats are identified.

Chapter 4 Joint fact-finding in science and technology studies

Matsuura considers JFF in the context of Science and Technology Studies (STS), which is an academic field that examines the relationships between science, technology, and society, asking questions around matters such as the social construction of knowledge. He introduces a valuable theoretical analysis that has been heretofore underexplored in the pragmatically oriented domain of JFF. Matsuura considers JFF through many of the key analytical lenses and concepts of STS, including: Trans-science, mode-2 science, the role of the honest broker, science in action, post-normal science, and boundary work and boundary organizations. He also introduces some of the other ways in which the science, technology, and society interface has been bridged, and relates them to JFF. These include technology assessment, chief scientific advisors, and scientific committees in international governance.

Chapter 5 Communicative science

Andrews introduces the concept of communicative science to examine the relationships between scientists and other stakeholders. In particular, he discusses some of the ways in which citizen science is evolving, including the opportunities and challenges presented when professional and amateur scientists attempt to collaborate and the differences between them diminish. Various examples are used to examine these dynamics. A common theme is that citizen science is growing and evolving quickly in no small part because of the plethora of technologies that citizens have at their fingertips. Andrews concludes that scientists will need to pivot to playing new roles as orchestrators, quality control, and sense-makers of aggregated data.

Chapter 6 The TOP Arenas: enabling practical cooperation while fundamental disagreement continues

Fuller proposes the TOP Arenas as a new theoretical framework that he argues bridges practice and theory in mediation and consensus building literature and demonstrates how joint fact-finding can be effective even when it is uncertain and stakeholders interpret it in many different ways. The TOP Arenas captures two important elements. The TOP stands for the terms and concepts (T), objects and frameworks (O), and processes and procedures (P) that joint fact-finding plays a crucial role in creating. Arenas stands for additional (A), removed (RE), negotiated

(N), and arena-specific (AS). Fuller asserts that TOP Arenas enable cooperation without requiring that stakeholder communities agree on any of the fundamentals—meaning, values, practices, and anything else core to how each community interprets and acts in the world. He illustrates his argument using a case that revolves around an acrimonious, decades-long conflict over water management in the Florida Everglades.

Chapter 7 Facts for now, facts for use: satisficing and adapting in joint fact-finding

JFF processes often implicitly assume static conditions, and that, with sufficient research, groups can develop comprehensive sets of facts. Schenk considers how JFF might respond to persistent or “deep” uncertainty, dynamic conditions, contested realities and the wicked nature of many problems. He posits that JFF efforts should aim for the more modest goals of devising *facts for now* and *facts for use*. He suggests that groups need to find ways to *satisfice* and make contingent decisions that will require ongoing monitoring, evaluation, and amendment. Schenk introduces *collaborative adaptive management*, *risk-based decision making*, and *scenario planning* as approaches that we might add to the JFF toolkit to facilitate more dynamic processes. He illustrates the opportunities and challenges using two examples: the adaptive management of the Glen Canyon Dam on the Colorado River, and research around the adaptation of infrastructure to climate change in three cities (Boston, Singapore, and Rotterdam).

Chapter 8 Linking science and decisions through collaborative processes: seven challenges, two approaches, four tools, five examples

Scarlett and Courtney draw on their extensive experience to consider how JFF is implemented in the “real world” of political, financial, and legal constraints. They focus on the context necessary to reduce conflict and generate better outcomes through collaborative processes, including JFF. They identify seven challenges that complicate the intersection of science and decision making: complexity, which necessitates cooperation; persistent change; persistent uncertainty; communication challenges; ambiguity around both the scope and scale; and the unavoidable matter of value differences, which are typically at the heart of conflict. They suggest that there are two converging approaches to tackle these challenges—better public engagement and better decision making—and introduce four tools to advance these approaches: Joint Fact-finding, Structured Decision-making, Collaborative Adaptive Management, and Collaborative Values Assessment. These approaches and tools are examined through five case examples from across the United States. One conclusion they reach is that our institutional arrangements are not always able to accommodate JFF and other collaborative approaches.

Chapter 9 Desalination in California: the California Coastal Commission/Poseidon Water joint fact-finding process

McCreary and Cowart introduce and examine a complex JFF process that they facilitated around the construction of a desalinization plant. They pay particular attention to four “elements of success” that they found particularly important or noteworthy, especially insofar as they offer new insights and in some cases contradictions to what is often in the literature: The creation of thorough Terms of Reference that reflected extensive joint “pre-process” decisions made by the stakeholders to structure the JFF and prime them for success; the iterative way in which stakeholders determined the scope and methods of analysis; the importance of striking a balance between inclusiveness and boundaries in public involvement so that the processes were transparent yet productive; and the instrumental role that internal champions for JFF played among the primary stakeholders. Two key challenges that they confronted are the tendency of stakeholders to engage in “system jumping” to attempt to shift the focus to issues external to the core Terms of Reference and influence the outcomes on broader water policy issues via other channels, and parties making moves before the JFF process is complete.

Chapter 10 Energy and climate stakeholder processes in the United States

Raab illustrates different approaches to JFF around complex energy and climate-related issues using three cases: The Cape & Islands Off-Shore Wind Stakeholder Process; Vermont’s Energy Future Project; and Boston’s Climate Action Plan Development Process. Some of the lessons he draws from these projects challenge the conventional wisdom. In the Cape Wind case, he concludes that the persistence of ‘dueling modeling’ was not detrimental to the process; stakeholders and citizens learned by comparing and contrasting the competing sets of data. His experiences with both Vermont’s Energy Future Project and Boston’s Climate Action Plan suggest that broader, meaningful citizen engagement—beyond the stakeholder representatives intensively involved—can be very important for garnering legitimacy, vetting the practicality of options, and inviting new ideas. Adding wider consultative processes onto JFF efforts takes time and resources, but may be invaluable in certain instances.

Chapter 11 The practice of joint fact-finding for resolving science-intensive controversies in Japan after the Fukushima accident

Matsuura starts with a brief historical review of science-intensive disputes in Japan, from the aftermath of the nuclear power plant accident in Fukushima to mercury poisoning at Minamata Bay in the 1960s. In these cases, he finds challenges in managing contested science without involving contentious battles in the courts and

media. In order to encourage collaborative problem solving through JFF, contending parties must be willing to resolve their disputes via dialogue and explore scientific backgrounds collaboratively. On the other hand, there have been several pilot cases of JFF in Japan, including those focused on the disposal of high-level nuclear waste. Reflecting on those experiences, he discusses the challenges in introducing JFF to Japan and other places beyond North America. Stakeholders do not adopt JFF in a vacuum. Instead, the introduction of JFF is part of a long-term transition in the preferred way of resolving differences, as well as in the relationship between scientific experts and laypersons.

Chapter 12 Finding the facts about joint fact-finding: criteria and approaches for rigorous evaluation

Responding to the lack of rigorous evaluation of JFF efforts, Czaika, Rumore, and Schenk draw from existing literatures to propose criteria and methods. They assert that better evaluation is necessary to both make the case for the value of JFF, and improve best practices over time. This chapter introduces criteria and methods that have been used to evaluate JFF, and criteria and methods we might draw from other collaborative approaches. After synthesizing these criteria and methods, it makes a case for why we need to evaluate both “input” criteria (i.e., process attributes) and “output” criteria (i.e., products and performance) not just to better understand the relationship between the two, but because each is important for distinct reasons. This chapter also introduces some methods for evaluation that might be drawn from other disciplines and areas of practice. Last but not least, it reflects on some confounding factors and considerations that deserve attention as evaluation is advanced.

Chapter 13 Conclusion

To conclude, Matsuura and Schenk provide their examination of what JFF really is, how it is being used in practice, and how it might evolve in the future. They argue that JFF is a practical approach for resolving science-intensive disputes, and that it is more realistic to adopt a loose definition that frames JFF as a range of practices with certain characteristics executed under various names. On the other hand, they argue that any JFF effort inherently has the following characteristics: 1) involve stakeholders; 2) discover commonalities and differences in the recognition of facts; 3) inform decisions or support dispute resolution in the public arena; 4) adapt to situations; and 5) acknowledge uncertainties. They also suggest that emerging challenges to expanding the use of JFF include: 1) practical issues, including the costs and need for professional expertise; 2) a necessary shift in how people see experts; 3) challenges dealing with “unknown unknowns”; 4) the translation and application of JFF at the global scale; and 5) more systemic evaluation of our experiences.

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