the ETS would have died, however, if Brussels had not left the member states to make the decisions about how to allocate the highly valuable emission credits on their own. The analysis in the Jordan et al. volume adds to a growing literature on the politics of instrument choice. Nearly all that literature suggests that when it comes to market-based instruments, emission trading schemes are politically easier to adopt because they require less visible intervention in the economy.

Fourth, and most importantly, the EU's credibility has risen in tandem with the integration of the European market and the creation of a common body of European law and administrative procedure. Higher credibility has amplified the EU's foreign policy voice. (The decline in the credibility of the United States on global warming and many other matters also helped.) That's the real story here—as the EU has worked through its dilemmas at home, it has been able to exert greater leverage on international agreements. Whether that has led to more effective international agreements to slow climate change is a topic that other studies should explore in more detail.

Inevitably, an edited volume that reflects a big multinational research project will have some flaws. The chief trouble with this book is the lack of a compelling common analytical framework. In addition to the six dilemmas, the authors also explore three policy paradoxes and a host of other side arguments and interesting diversions. Each is based partially on different underlying theories. The result is interesting expert commentary, but the central threads of the book and the project are hard to spot.

The framework, though a bit sprawling, is better able to explain EU policy on mitigating emissions of warming gases. The authors have a harder time identifying and pinning down the forces that explain EU policy on adaptation—in part because adaptation policies are "mainstreamed" into societies and thus harder to spot, and in part because they are less likely to affect the internal trade of goods and services. As Jordan et al. wisely suggest, a Brussels-centered approach to policy has been easier for mitigation because policies that regulate warming gases have a direct impact on trade in goods and services and thus can draw more reliably on the body of EU law (and political support from the member states) anchored in the common market.

Until about two decades ago, the United States was the reliable leader on most international environmental issues. All that has changed, and the EU now usually occupies that spot. Studies like this one from Jordan et al. suggest that this shift is rooted, partially, in the integration of the EU, which has made Europe a much more strategic and powerful actor in foreign policy. What happens at home—especially in a federation such as the EU where the influence of central government is still uneven—determines what governments can get done abroad.

Science in Environmental Policy: The Politics of Objective Advice. By Ann Campbell Keller. Cambridge, MA: MIT Press, 2009. 304p. $52.00 cloth, $26.00 paper.
doi:10.1017/S1537592710003567

— William Ascher, *Claremont McKenna College*

In her book, Ann Campbell Keller sets out to explore the influence that scientists have had in policymaking on two environmental problems, acid rain and global climate change, focusing largely on their relative influence in the three stages of agenda setting, legislation, and implementation. The narratives on the scientist-policymaker interactions on these issues provide crisp summaries that are useful background for understanding the interplay between science and other inputs to the policy process. The major hypothesis is that scientific findings have declining power in the process as it moves from agenda setting to legislation to implementation. This is presented as a refutation of John Kingdon's argument that experts have high influence in devising policies, but not in agenda setting.

Following the chapters on each of these policy stages is a thoughtful conclusion that emphasizes that even if scientists do not—and cannot—adhere to the "rational ideal" of pure objectivity, the *perception* that scientific inputs are technical rather than political is extremely important for the legitimacy of the policy processes that incorporate them. In reality, scientists are often drawn into expressing their values. Yet the perception of objectivity, allowing some scientific inputs to be accepted as politically neutral findings, balances the overtly value-oriented democratic participation in environmental policymaking. The perhaps unfortunate subtitle does *not* signal that Keller naively believes that scientists are always objective. Her argument is that as initiatives get closer to the actual formulation of authoritative policies, the demands for "objectivity" rise, narrowing the scope of what scientists can plausibly assert: expressions of findings rather than expressions of values.

Keller identifies the constraints that emerge in each stage, ranging from the unwillingness of scientists to go beyond their self-defined roles to the questioning of scientific accuracy by interest-group representatives. An important explanatory premise is that different norms pertain to each policy stage, either permitting scientists to have considerable influence *and* to desire to play a significant role, or limiting their participation as inappropriately "technocratic" or because they are uncomfortable functioning under those norms.

The author also devotes much attention to the "boundary work," following Thomas Gieryn, that establishes how far, and in what modes, scientists are involved in policymaking. The book has rich information concerning how existing legislation, institutional arrangements, prevailing norms, organizational strategies, and behavior of scientists and other actors shape the limits of scientists' expressions of value positions and policy recommendations. For

example, she notes the firewalls that have been erected between Environmental Protection Agency mainline personnel and the EPA Office of Research and Development, its Scientific Advisory Board, and external researchers funded by EPA grants.

The chapter on agenda setting provides an insightful analysis of how individual scientists and science organizations frame environmental policy issues and provide narratives to highlight the importance of environmental risks. On the basis of rich interviews and careful analysis of the institutions that distill scientific judgment (e.g., the National Research Council and the governmental National Acid Precipitation Assessment Program), Keller argues that scientific research and the modalities for expressing it met little resistance in the elevation of the two issues to public attention. She also convincingly argues that scientists play a crucial role in how environmental problems are defined. However, the focus on two of the most prominent environmental issues begs the question of whether the influence of scientists is typically highest at this stage.

The chapter on scientific input in the legislative arena is less successful. It relies heavily on the objective data on which scientists participate in congressional hearings and whether scientists of different institutional affiliations take explicit policy positions. With this information, Keller categorizes the scientists who are challenged by legislators to state policy positions as unapologetic boundary crossers, apologetic boundary crossers, or boundary observers. This is a useful distinction, but what it says about norms and reluctance to promote their policy preferences is quite unclear. The first problem is that whether or not a scientist explicitly takes a policy position is not a useful indicator of how much scientists' testimony can influence legislative outcomes. Reporting objective findings on the severity of environmental risks may well be more compelling than risking the possibility that findings will be dismissed as contrived rationalizations for policy preferences. By the same token, the unwillingness to make recommendations may reflect the tactic of avoiding the complication of taking a position, rather than philosophical qualms about scientific neutrality. The second problem is that although congressional hearings are the most visible and accessible aspect of the legislative process, the logic behind the formatting of congressional hearings, with deliberate balancing of interests and positions on all sides, often renders hearings more ritual than an influential part of the policy deliberations. It is likely that more important influences on legislation come from "behind the scenes" work by agency experts, congressional staff experts, and specialists employed by industry groups and advocacy groups. Finally, it is not clear that congressional hearings are most usefully viewed as part of the legislative rather than the agenda-setting stage. Legislators and their staffs frequently use hearings to publicize the importance of particular issues.

These problems reflect the analytical weakness of Keller's categorization of policy stages. Instead of using a more comprehensive framework of multiple functions rather than three stages, the analysis is hostage to the sequence of agenda setting, legislation, and implementation. The fact that the legislative process can alter the prominence of issues seriously blurs the distinction between agenda setting and legislation. It is puzzling that the author, after favorably citing Harold Lasswell's much richer framework of policy–process functions at the very beginning of her introductory section on "policy stages," opts for the simplistic Kingdon version. Lasswell's continually interacting, iterative functions (definitely not to be understood as stages) would have resolved this ambiguity by pointing out that the "promotion" function can be found in any of the formal activities of policymaking.

Keller could have adopted this framework to depict scientists as heavily involved in the *intelligence* function of gathering information, analyzing problems, and identifying policy options. In addition to the *promotion* of their policy and outcome preferences, of which agenda setting is only one aspect, scientists also contribute to the *prescription* function of developing laws, regulations, and other rules, whether formal or informal; to the *invocation* function of determining which rules should be applied in particular cases; to the *application* of these prescriptions; to the *appraisal* of how well existing policies and programs are doing; and to the determination of whether existing policies ought to be *terminated*.

With this framework, Keller could have avoided truncating her "implementation" analysis, which, though usefully detailed with respect to regulatory programs, almost entirely ignores the role of the court system—clearly one of the most important institutions involved in the invocation process. Because the bulk of EPA rules, and the decisions of many other federal agencies, are litigated, the ways in which scientific inputs are employed or limited in court decisions are very important for understanding the opportunities and constraints facing scientific inputs.

Despite these shortcomings of empirical basis and framework, *Science in Environmental Policy* is a very useful source of narrative about two crucial environmental issues, and offers thoughtful insights into the boundaries between science and politics.

American Environmental Policy, 1990–2006: Beyond Gridlock. By Christopher McGrory Klyza and David Sousa. Cambridge: MIT Press, 2008. 408p. $30.00.
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— Edella Schlager, *University of Arizona*

In the preface, Christopher McGrory Klyza and David Sousa declare what they intend to accomplish: "[E]nvironmental policymaking today is vibrant and complex, with a variety of opportunities for action. It is also full of