

June 2000

## Pursuing Transparency through Science Courts

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Thomas G. Field, Jr., *Pursuing Transparency through Science Courts*, 11 RISK 209 (2000).

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# Pursuing Transparency through Science Courts

## **Abstract**

[Excerpt] "The frequency and magnitude of risks and benefits are facts. The acceptability of risks associated with particular benefits is not. In the best of all worlds, normative choices based on facts would be made directly by persons at risk. We do not have the best of all worlds. As we move from consumer to occupational and environmental risks, political transparency increasingly must substitute for individual autonomy. When we cannot each have our way, we should be able to decide which facts are important, to have access to such facts and to be able to influence decisions based on them."

## **Keywords**

risk assessment, risk-benefit analysis, expert opinion, layperson opinion

# Pursuing Transparency Through Science Courts

Thomas G. Field, Jr.\*

## Introduction

A decision is transparent if people can understand why it was made. Although not so labeled, the basic objectives of transparency were well framed by Corwin Edwards in 1970. In testimony before The National Commission on Product Safety, he said:

Risks ... are not unreasonable when consumers understand that [they] exist, can appraise their probability and severity, know how to cope with them, and voluntarily accept them to get benefits that could not be obtained in less risky ways.<sup>1</sup>

The frequency and magnitude of risks and benefits are facts. The acceptability of risks associated with particular benefits is not. In the best of all worlds, normative choices based on facts would be made directly by persons at risk. We do not have the best of all worlds. As we move from consumer to occupational and environmental risks, political transparency increasingly must substitute for individual autonomy. When we cannot each have our way, we should be able to decide which facts are important, to have access to such facts and to be able to influence decisions based on them.<sup>2</sup>

Yet, not everyone is interested in transparent risk-related decisions. Bureaucrats and politicians rarely care to be overtly responsible for prices set on others' lives, or even on beautiful vistas. They would rather insist that unpleasant decisions are mandated by circumstances beyond their control — sometimes by science, sometimes by regulatory procedures, both poorly understood. This is demonstrated when politicians campaign against bureaucrats whom they ultimately control.

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1 The National Commission on Product Safety, Final Report 11 (1970).

2 See Kristin S. Shrader-Frechette, *Evaluating the Expertise of Experts*, 6 *RISK* 115 (1995).

Consider, too, a recent event involving the U.S. National Academy of Sciences (NAS). In 1997, a federal appellate court found NAS committees, when they provide technical advice to federal agencies, to be subject to the Federal Advisory Committee Act (FACA).<sup>3</sup> That statute, among other things, makes committee meetings public.<sup>4</sup> The response was incredibly swift. A bill explicitly exempting NAS committees from FACA was hustled through Congress in four days and signed by President Clinton slightly more than a month later.<sup>5</sup>

Even informed consumer choice is difficult to achieve — particularly in medical treatment. Yet, most would regard patient autonomy as warranting full effort. It is sometimes useful to analogize from health care to regulatory decisions.<sup>6</sup> What distinguishes decisions appropriate for physicians (experts) and from those appropriate for patients (citizens)? Where do regulators fit as we analogize to fully delegated regulatory choices? When are regulators more like physicians; when, patients? When are outside opinions warranted, and by whom?

### Origins of the Science Court

Answering the last question first, I suggest that outside opinions might sometimes usefully be provided by something Arthur Kantrowitz first proposed in 1967.<sup>7</sup> Only later called the “Science Court,” his Institution for Scientific Judgment was intended to address a common tendency to misrepresent facts for political ends. About ten years later, he chaired a Ford Administration Task Force appointed to study ways to subject scientific claims to public scrutiny before a panel of competent, neutral scientists.<sup>8</sup> Also serving was Allan Mazur, who had independently arrived at the same basic conclusion.<sup>9</sup> The group’s interim report, published in *Science* and soon thereafter aired at a

3 See *Animal Legal Defense Fund, Inc. v. Shalala*, 104 F.3d 424 (D.C. Cir. 1997).

4 See 5 U.S.C.A. App. 2 (1996).

5 See Public Law 105-153 (H.R. 2977 was introduced Nov. 9, 1997, cleared for the White House on Nov. 13, and signed by the President Dec. 17, 1997).

6 See Jonathan Baert Wiener, *Managing the Iatrogenic Risks of Risk Management*, 9 RISK 39 (1998).

7 Arthur Kantrowitz, Testimony before the Government Research and Technical Programs Subcomm. of the House Comm. on Government Operations, 90th Cong., 1st Sess. (March 16, 1967).

8 See *id.*

9 Allan Mazur, *The Science Court: Reminiscence and Retrospective*, 4 RISK 161 (1993).

public meeting in Leesburg, Virginia, admitted that:

We have no illusions that this procedure will arrive at the truth, which is elusive and tends to change from year to year. But we do expect to ... provide defensible, credible, technical bases for urgent policy decisions.<sup>10</sup>

Preceded by generous publicity, the Leesburg Colloquium on the Science Court was well attended.<sup>11</sup> The atmosphere was electric. Noble experiments were proposed, and prominent officials promised to support them. However, Ford's administration had no opportunity to deliver, and later administrations saw no reason. Of that, Mazur has related:

Looking back, the post-Watergate presidency of Gerald Ford was a contentious time.... Investigative journalism was still enjoying its greatest success, and many young practitioners in other fields including the natural and social sciences adopted the same combative stance, often as champions of little people at odds with the big interests.... At that time, perhaps the most visible involvement of scientists in a public controversy was the battle of New York Times petitions, listing in one day's advertisement hundreds of scientists who opposed nuclear power and on another day hundreds in favor. To the public (including me), technical expertise seemed no more reliable than psychiatric witnesses in a courtroom....<sup>12</sup>

Labels are important, too. Kantrowitz has aptly observed that "acceptance of the media term, 'Science Court,' was a mistake and has sadly led to much confusion."<sup>13</sup> Further, Mazur has said that it:

got us into trouble nearly from the start, suggesting a return to Galileo's time when established authority could dictate that the sun revolved around the earth. Our intent was just the opposite.... In the end, the Science Court itself became so controversial that it had no chance of success. Like a sky rocket, it got a lot of attention as it ascended but just as quickly fell downward to crash and burn.<sup>14</sup>

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10 Task Force of the Presidential Advisory Group on Anticipated Advances in Science and Technology, *The Science Court Experiment: An Interim Report*, 4 RISK 179, 180 (1993), reprinted from 193 Science 654 (1976).

11 See Proceedings of the Science Court Colloquium 254 (1976).

12 Mazur, *supra* note 9, at 161-62.

13 Arthur Kantrowitz, *Elitism vs. Checks and Balances in Communicating Scientific Information to the Public*, 4 RISK 101 (1993).

14 Mazur, *supra* note 9, at 161.

Still, Mazur and Kantrowitz have remained diligent in trying better to distinguish technical fact from hyperbole and fiction. I, but a witness at Leesburg, have also been fascinated, finding that Court to be “a source of inspiration and the focus of important dialogue.”<sup>15</sup> I am glad for this opportunity to discuss it.

### Key Features of the Science Court

At the heart of the Institution for Scientific Judgment, as Kantrowitz preferred to call it, was a new canon to govern and be enforced by scientists:

Any scientist who addresses the public or lay officials on scientific facts bearing on public policy matters should stand ready to publicly answer questions not only from the public, but from expert adversaries in the scientific community.<sup>16</sup>

Strongly suggesting the idea of a U.S. trial court was a recurring notion that advocates would cross-examine witnesses. Other aspects of the proposed institution also bring courts to mind. As explained by the Task Force, it was to hold public:

adversary hearing[s] ... governed by a disinterested referee, in which expert proponents of the opposing scientific positions argue their cases before a panel of scientist/judges. The judges themselves will be established experts in areas adjacent to the dispute. They will not be drawn from researchers working in the area of dispute, nor will they include anyone with ... [a predisposing] bias.... After the evidence has been presented, questioned, and defended, the panel of judges will prepare a report ..., noting points on which the advocates agree and reaching judgments on disputed statements of fact. They may also suggest specific research projects to clarify points that remain unsettled.<sup>17</sup>

The Task Force report also briefly sketched methods for selecting issues to be resolved, securing independent funding, and appointing advocates, judges and referees.<sup>18</sup> Procedural details were to be refined in governmentally-sanctioned experiments, but as Kantrowitz found:

It was not hard to persuade presidential campaigns to promise such developments. However it was not found

15 Thomas G. Field, Jr., *The Science Court is Dead; Long Live the Science Court!* 4 RISK 95, 100 (1993) (Introduction to symposium).

16 Kantrowitz, *supra* note 13, at 106.

17 *Supra* note 10, at 180.

18 *See id.* at 181-86.

possible to get elected officials interested in [something] intended to limit their flexibility to state the scientific facts as they wanted them stated.<sup>19</sup>

### Seeking Competent Public Policy

The Science Court is directed at reducing the extension of authority beyond competence, which was Pascal's definition of tyranny. It will stand in opposition to efforts to impose the value systems of scientific advisers on other people. It is so constructed in the belief that more broadly based institutions should apply societal values and develop public policies in the areas to which the facts are relevant.<sup>20</sup>

### *How Science Courts Could Contribute*

Notwithstanding its allusions to legal processes, the Institution for Scientific Judgment lacked many court characteristics because scientists were to control it. For example, regarding referees, the Task Force said: "For discussion we propose ... a scientist advised by legal counsel, so that full responsibility for this procedure can be retained by the scientific community."<sup>21</sup> Still, the Court was designed to play a key role in legal or political disputes and must be analyzed from a legal perspective.

According to a simple model, legislatures make law, executives enforce it, and judges, sometimes with jury help, determine whether the law has been violated. Even in the context of purely public law, the model tends to be incomplete. Modern agencies may legislate, prosecute and adjudicate — and, at least in the U.S., are often called the fourth branch. Further, Sheila Jasanoff has aptly suggested that technical advisors who serve agencies may be regarded as a fifth branch.<sup>22</sup>

Disputes are resolved externally by rulemaking or adjudication. Adjudication focuses on particular events and parties. It may decide, e.g., whether a particular nuclear reactor should operate. Rules dictate whether a particular kind of reactor, if any, should be licensed. The processes and results are often fundamentally different. The Science Court would seem more useful for rulemaking.

19 Kantrowitz, *supra* note 13, at 108 (citation omitted).

20 See *supra* note 10, at 180.

21 *Id.* at 183.

22 Sheila Jasanoff, *The Fifth Branch: Science Advisers as Policymakers* (1990).

Rules are normative and often prescriptive; moreover, they address what *should be* done in the future, not what *was* done in the past. Yet, rules are also usually based on and must account for historical facts and natural or descriptive laws. Normative rules cannot repeal the law of gravity. It is here that Science Courts might contribute to a technically competent and transparent process.

### *Transparency*

As already suggested, politicians may not welcome transparency. Members of the technical community may likewise eschew it. Some reasons have been well stated by Halina Brown and her colleagues:

[I]t is unlikely that any scientific or technical group continues to be politically detached. Most are intensely involved through an elaborate system of consultancy, advisory committees and participation as legal expert witnesses.<sup>23</sup>

Likewise, Kantrowitz has said:

Science has lost its independence. Its status has not grown with its appetite for funds.... Frank Press called raising money for basic research “the most important activity I can undertake as president of the National Academy of Sciences.” Because the NAS is a prime source of facts needed by arbiters of values, this poses a serious conflict.<sup>24</sup>

Going to the heart of the matter, however, a report issued under the auspices of Vice President Gore opined that the proposed Court withered on the vine, largely because it is doubtful that scientific and policy issues can be separated.... This is particularly true in connection with risk assessment decisions ... in emotionally charged contexts....<sup>25</sup>

Does this obviate the need or make it more compelling? To answer, one must consider ways in which much U.S. technical policy is established.

## U.S. Rulemaking

### *Options and Challenges*

Congress ultimately controls most federal U.S. law making. Yet, at least since the Supreme Court’s *Chevron* decision, agency rules may

<sup>23</sup> Halina S. Brown et al., *Reassessing the History of U.S. Hazardous Waste Disposal Policy*, 8 RISK 249, 271 (1997).

<sup>24</sup> Arthur Kantrowitz, *The Separation of Facts and Values*, 6 RISK 105, 108-09 (1995) (citation omitted).

<sup>25</sup> *Improving Regulatory Systems Team, From Red Tape to Results — Creating a Government That Works Better & Costs Less* 60 (1993).

enjoy the same status as legislation.<sup>26</sup> For that to occur, agencies must follow the U.S. Administrative Procedure Act (APA).<sup>27</sup> It contains both formal and informal rulemaking provisions. Formal rulemaking is similar to U.S. adjudication. For example, facts are presumptively introduced by testimony subject to cross-examination.<sup>28</sup> Because it is more cumbersome, the APA does not require such rulemaking unless statutes conferring substantive authority so dictate.<sup>29</sup> Indeed, in *Vermont Yankee*, the U.S. Supreme Court rejected the proposition that the APA sets only

lower procedural bounds and that a court may routinely require more than the minimum when an agency's proposed rule addresses complex or technical factual issues or "Issues of Great Public Import."<sup>30</sup>

Most scientists would dread cross-examination. Although it is unclear exactly what was meant, the interim report said that the Court "should preserve the right of each case manager to cross-examine completely the positions taken by his adversary."<sup>31</sup> A trial-type process would increase costs.<sup>32</sup> Although the issues were not particularly technical, an infamous episode is often invoked to make the point.

According to Robert Anthony, then-Chair of the Administrative Conference of the U.S., a formal rulemaking hearing to address whether "peanut butter" should contain 87.5% or 90% peanuts lasted over ten years and generated more than 7,700 pages of transcript.<sup>33</sup> Worse, it is hard to see how witnesses' demeanor relates to choices among conflicting statements of scientific fact.<sup>34</sup> Still, Congress frequently requires adjudicative processes for rulemaking,<sup>35</sup> causing one to wonder whether some members (opaquely) intend to signal one

26 *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984).

27 See 5 U.S.C.A., principally §§ 551-59 and §§ 701-06 (1996).

28 See 5 U.S.C.A. § 557(d) and (e) (1996).

29 See 5 U.S.C.A. § 553 (c) (1996).

30 *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 545 (1978).

31 *Supra* note 10, at 185.

32 See Carl F. Cranor, *Science Courts, Evidentiary Procedures and Mixed Science-Policy Decisions*, 4 RISK 113 (1993).

33 See *Ass'n Nat'l Advertisers, Inc. v. FTC*, 627 F.2d 1151, n.34 (D.C. Cir. 1979).

34 See also Fed. R. Evidence 201 (annotations address "adjudicative" and "legislative" facts; these exclusionary rules do not apply to the latter).

35 See *Ass'n Nat'l Advertisers, Inc.*, 627 F.2d 1151.

thing by granting rulemaking authority, while desiring, in fact, that no rules be promulgated.

Only by contrast is “informal” rulemaking informal.<sup>36</sup> It requires no oral hearing.<sup>37</sup> If one is held, questions are asked by hearing officers, not advocates. Unlike formal rulemaking, ex parte contacts are usually tolerated, e.g., to facilitate negotiation.<sup>38</sup> Yet, informal rulemaking *does* require public notice and opportunity for comment. As the APA has been interpreted, it also requires more than token agency response to public comment.<sup>39</sup> Unfortunately, even informal process has become so cumbersome that a blue ribbon Carnegie commission found it not

surprising that EPA claims that informal rulemaking procedures take approximately five years to complete, that the FTC has completed only a handful of rulemaking procedures in the past decade or two, that rules once promulgated tend to remain “frozen in place,” immune to change that advances in scientific knowledge warrant, and that many agencies ... have looked for alternative vehicles ... to make policy.<sup>40</sup>

Recognizing the challenge of balancing speed and cost against public participation and careful analysis, the commission nevertheless decried agencies’ tendency to afford little if any opportunity for participation.<sup>41</sup> It encouraged further study and experimentation — with negotiated rulemaking, for example.<sup>42</sup>

### *Negotiation, Mediation and Beyond*

What can negotiation, accomplish? Sheila Jasanoff has concluded that: “In regulatory science, as in most areas of contested activity, solutions are more likely to emerge from negotiation and compromise than from bipolar, head-to-head conflict.”<sup>43</sup> While some may protest that propositions cannot be made true by agreement, what of unknown

<sup>36</sup> See *id.*

<sup>37</sup> See *Vermont Yankee Nuclear Power Corp.*, 435 U.S. 519.

<sup>38</sup> See *Sierra Club v. Costle*, 657 F.2d 298 (D.C. Cir. 1981).

<sup>39</sup> See *Motor Vehicle Mfrs. Ass’n, U.S., Inc. v. State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29 (1983).

<sup>40</sup> Carnegie Commission on Science, Technology and Government, *Risk and the Environment: Improving Regulatory Decision Making* 108 (1993).

<sup>41</sup> See *id.* at 109.

<sup>42</sup> See *id.* at 111.

<sup>43</sup> Sheila Jasanoff, *Procedural Choices in Regulatory Science*, 4 RISK 143, 160 (1993).

facts? What if additional evidence is too expensive or cannot be obtained in time?

Where findings must be made at the frontiers of science, the U.S. Supreme Court in *Industrial Union* held:

so long as they are supported by a body of reputable scientific thought, the Agency is free to use conservative assumptions in interpreting the data with respect to carcinogens, risking error on the side of overprotection rather than underprotection.<sup>44</sup>

In both law and science, proponents of the status quo are advantaged. Evidentiary burdens vary widely.<sup>45</sup> Sometimes, a mere preponderance may be enough. If not, burdens such as “clear and convincing,” “beyond a reasonable doubt” or even “certainty” may apply with ever less likelihood of overturning the status quo. Facts are not negotiable, but presumptions are. Consider again the prior quotation from *Industrial Union*.

Negotiation is important to resolve such issues. When it fails, mediation is increasingly popular; its popularity fosters an increased availability of trained mediators and generates even more popularity.<sup>46</sup> Many disputed issues have been settled early in academic adversarial experiments.<sup>47</sup> This is common; it is said, e.g., that “Only about 5% of all cases commenced in Ontario actually go to trial.”<sup>48</sup> Parties often do not appreciate weaknesses in their own or strength in their opponents’ positions until fully prepared for a formal confrontation. Particularly if agreement would not otherwise have been reached, such effects are clearly mediatory.

Still, factual disputes unresolved in advance of confrontations may be unresolvable with available evidence. Mazur has, thus, opined that *judges* might add little.<sup>49</sup> He also found some disputants unwilling to participate.<sup>50</sup> These are related because proponents of a status quo

<sup>44</sup> *Industrial Union Dept., AFL-CIO v. American Petroleum Inst.*, 448 U.S. 607, 656 (1980).

<sup>45</sup> See Cranor, *supra* note 32.

<sup>46</sup> See Thomas G. Field, Jr. and Michael Rose, *Prospects for ADR in Patent Disputes: An Empirical Assessment of Attorneys Attitudes*, 32 IDEA 309, 319 (1992).

<sup>47</sup> See Kantrowitz, *supra* note 13, at 109; Mazur, *supra* note 9, at 167-68.

<sup>48</sup> The Mediation Centre of Simcoe County, Inc., Dispute Resolution Home Page, online at <<http://www.dispres.com/>> (Ontario, Canada).

<sup>49</sup> Mazur, *supra* note 9, at 168.

<sup>50</sup> See *id.*

usually must face potentially adverse outcomes before bargaining. Processes without coercive power may well suffer, and a third party with power to declare, e.g., that facts are inadequate, may be critical.

Still, the Task Force proposal left open many details, and some parts may have caused confusion. For example, “referees” were to maintain order.<sup>51</sup> This is typically what trial “judges” do. Trial courts do not have referee-chairs, but arbitration panels do. I have long regarded the proposed Court as more arbitral than judicial, because of that and the use of ad hoc panels.<sup>52</sup> Also, the Court seemed to be sparked by distrust of lawyers and courts, as well as by skepticism about the ability of existing institutions to resolve sophisticated technical issues transparently.

Judges were once hostile, but it is noteworthy that parties increasingly face mediation and arbitration before being allowed in trial courts.<sup>53</sup> I am aware of no court-annexed criminal arbitration, but arbitration was recently added to U.S. Copyright Office procedures.<sup>54</sup>

### Conclusion: Science Courts, Arbiters & Boards

A federal report that looked askance at the Science Court nevertheless applauded science boards at EPA and FDA. It recommended that more such boards be created.<sup>55</sup> That is perplexing; how do or might they differ?

Independence is one key difference. Advisory committees housed within particular agencies are apt to be more political than the proposed Court. Sometimes, too, advice less focused on needs of particular agencies is helpful.<sup>56</sup> The Carnegie commission mentioned earlier suggested several reasons why non-governmental institutions could foster “creative approaches to address the major environmental, health and safety challenges facing the nation.”<sup>57</sup> Yet, institutions might not need to be fully independent to serve such ends.

51 See *supra* note 10, at 183.

52 See Thomas G. Field, Jr., *Which Scientist Do You Believe? Process Alternatives in Technological Controversies*, 6 RISK 97, 100-01 (1995) (Introduction to symposium).

53 See The Mediation Centre of Simcoe County, Inc., Dispute Resolution Home Page, online at <<http://www.dispres.com/>> (Ontario, Canada); Susan M. Leeson and Bryan M. Johnson, *Ending It: Dispute Resolution in America* 82, 141 (1988).

54 See 17 U.S.C.A. §§ 801-803 (1996, 1998 Supp.).

55 See Improving Regulatory Systems Team, *supra* note 25, at 60-61.

56 See Wiener, *supra* note 6.

57 Carnegie Commission on Science, Technology and Government, *supra* note 40, at 113.

The commitment to separating facts and values offers another possible key difference. Mazur has said that separating facts and values never posed a problem in academic trials.<sup>58</sup> Should it be otherwise — as in *Industrial Union* — this would not warrant throwing up our hands.<sup>59</sup> In the U.S., virtually all legal process turns on the fact-value separation; e.g., the Seventh Amendment to our Constitution dictates that “*no fact* tried by a jury *shall be otherwise re-examined* in any Court..., than according to the rules of the common law.” [Emphasis added.]

I agree with Kantrowitz: It is important to *try* to distinguish facts and values. Not doing so increases the odds that subjective goals will drive “scientific” findings that, in turn, support policy decisions.<sup>60</sup> Avoiding this warrants full attention, and the Science Court deserves continued consideration.




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58 Mazur, *supra* note 9, at 166-67.

59 See *Industrial Union*, 448 U.S. 607.

60 See Kantrowitz, *supra* note 24.

