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JUSTICE BRENNAN'S USE OF SCIENTIFIC AND EMPIRICAL EVIDENCE IN CONSTITUTIONAL AND ADMINISTRATIVE LAW†

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The struggle for certainty, for confidence in one's interpretive effort, is real and persistent. Although we may never achieve certainty, we must continue to struggle, for it is only as each generation brings to bear its experience and understanding, its passion and reason that there is hope for progress in law.[1]

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[1] Brennan, *Reason, Passion, and "The Progress of the Law,"* 42 REC. A. B. CITY OF N.Y. 948, 962 (1987).

This essay is a tribute to the now-retired Justice William J. Brennan, Jr.[2] I was fortunate to have served as his law clerk in the 1986 October Term. Because of my interdisciplinary training, I have a particular interest in Justice Brennan's views on the relationship of law and science. In our conversations during my clerkship, the Justice was quite interested in my medical and scientific background.[3] He has a certain fascination with science and technology[4] and has noted both the tremendous impact that scientific advances have had on modern society, and the importance for law to be responsive to human needs that have changed because of these advances.[5]

This essay focuses on Justice Brennan's approaches to cases which involve the substantive review of scientific and empirical evidence as a means to ensure the accountability of government institutions. In particular, I comment on a difference in his approaches to evaluating factual issues in constitutional and administrative law. Part I describes his recognition of the value of scientific knowledge and his willingness to evaluate the substance of scientific evidence in his opinions involving the Bill of Rights. Instead of being deferential to scientific and empirical fact-finding by legislative bodies, he has relied on an independent review of scientific information as a judicial check on governmental entities. In contrast, Part II describes cases in which Justice Brennan has dis-

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[2] This essay incorporates and builds on some of my preliminary thoughts that I expressed in an earlier tribute to Justice Brennan. *See* Hashimoto, *A Tribute to Justice William J. Brennan, Jr.: His Use of Scientific Evidence in Constitutional Adjudication*, 30 WASHBURN L.J. 701 (1991). In this earlier essay, I analyzed the case of McCleskey v. Kemp, 481 U.S. 279 (1987), in the same way that I do in this essay. Subsequent to the acceptance of the final draft of this earlier essay, an excellent article on the use of empirical evidence in constitutional law was published. *See* Faigman, *"Normative Constitutional Fact-Finding:" Exploring the Empirical Component of Constitutional Interpretation*, 139 U. PENN. L. REV. 541 (1991). Professor Faigman arrived at conclusions similar to my own in his analysis of the *McCleskey* case, but he concentrates primarily on critiquing the majority opinion. *See id.* at 595–600.

[3] I had trained as a physician before attending law school and also continued specialty training in occupational and environmental medicine just before and after my Supreme Court clerkship. This medical training included the study of epidemiology, which is the empirical science upon which modern medicine is based. On my first day as his law clerk, Justice Brennan recalled that Justice Douglas had once hired a chemist—who had no legal training—to work on intellectual property cases. He seemed quite pleased that he was establishing an otherwise new precedent in clerk-hiring.

[4] *See, e.g.*, Brennan, *Space Colonization and the Law*, 3 HARV. J.L. & TECH. 7 (1990).

[5] Brennan, *"How Goes the Supreme Court?"* 36 MERCER L. REV. 781, 786–87 (1985). As a consequence, Justice Brennan has also appreciated the importance of encouraging law teachers to explore the interdisciplinary nature of law: "Law teaching is increasingly emphasizing the knowledge and experience of the other disciplines . . . ." *Id.* at 788.

played some reservation in imposing legal requirements that would require the Court to scrutinize carefully the scientific merits of federal regulatory decisions that do not involve human rights under the Constitution. Rather, he has generally shown considerable deference to agency expertise.

Part III offers some explanations for the difference in his approaches in evaluating scientific fact-finding by legislative bodies and administrative agencies. I discuss several possible explanations for this divergence, including considerations of institutional capabilities, differences in the language of the Constitution as compared to administrative law, and the possibility that he may just be result-oriented. Each of these explanations has, however, its shortcomings in justifying the different treatments of scientific information. Alternatively, I offer a plausible explanation based on Justice Brennan's view of the separation of powers doctrine. In his view, Article III courts are empowered to define constitutional rights. Congress may, however, create other rights and assign the factual determinations involved in defining these congressionally-created rights to administrative agencies. Thus, the Supreme Court should conduct an independent evaluation of scientific information in constitutional fact-finding, but should defer to administrative agency fact-finding if a congressionally-created right is at issue. Justice Brennan's approach arguably permits both constitutional and administrative lawmaking to consider current scientific information and thus ensures the proper "progress in law."

I. Use of Scientific and Empirical Evidence in Constitutional Law

> Our Constitution was not intended to preserve a preexisting society but to make a new one, to put in place new principles that the prior political community had not sufficiently recognized.[6]
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> The document that the plurality construes today is unfamiliar to me. It is not the living charter that I have taken to be our Constitution; it is instead a stagnant, archaic, hidebound document steeped in the prejudices and superstition of a time long past. *This* Constitution does not recognize that times change, does not see that sometimes

[6] Brennan, *Construing the Constitution*, 19 U.C. Davis L. Rev. 2, 7 (1985).

> a practice or rule outlives its foundations. I cannot accept an interpretive method that does such violence to the charter that I am bound by oath to uphold.[7]

When deciding matters of constitutional law involving human rights, Justice Brennan was a self-admitted activist judge. He was committed to the belief that judging must be "guided by the principle that 'justice or righteousness is the source, the substance and the ultimate end of the law,'" and he candidly distinguished himself from the passivist judge "guided by the principle that 'courts do not sit to administer justice, but to administer the law.'"[8]

The Justice believes that the evolution of constitutional doctrine "only reflects the momentous changes we have witnessed in society."[9] One impetus to this movement is "the formation of new thought structures due to scientific advances and social evolution."[10] Thus, constitutional law should not be static and bound by historical precedent, but instead should "come alive as a living process responsible to changing human needs."[11] Justice Brennan believes that law must reflect the knowledge and experience of other disciplines, including science.

It is not surprising, then, that in his opinions the Justice recognized the importance of scientific knowledge and showed a willingness to use scientific information to justify holding the government accountable to the Bill of Rights. Two cases in particular are pertinent to this observation: *McCleskey v. Kemp*[12] and *Craig v. Boren*.[13] In both cases, Justice Brennan conducted a substantive review of scientific information as a judicial check on the actions of government.[14] In neither case did he assume that the Court should

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[7] Michael H. v. Gerald D., 491 U.S. 110, 141 (1989) (Brennan, J., dissenting).

[8] Brennan, *A Tribute to Justice Harry A. Blackmun*, 13 AM. J.L. & MED. 163, 165 (1987).

[9] *See* Brennan, *supra* note 5, at 786.

[10] *Id.*

[11] *Id.* at 787.

[12] 481 U.S. 279 (1987).

[13] 429 U.S. 190 (1976).

[14] These two cases are only examples. There are several other cases in which Justice Brennan has conducted a substantive review of scientific information and has used his conclusions to hold governmental institutions accountable to the Bill of Rights. *See, e.g.*, Michael H. v. Gerald D., 491 U.S. 110, 148 (1989) (Brennan, J., dissenting) (contending that due process should allow a putative father a right to a court hearing to prove his fatherhood in light of blood tests that show a 98% probability that he is the child's father); Bazemore v. Friday, 478 U.S. 385, 400 (1986) (evaluating petitioners' statistical analysis and concluding that it may provide acceptable evidence of Title VII violations); Winston v. Lee, 470 U.S. 753, 766 (1985) (noting the uncertainty in the medical testimony by various surgeons and concluding that the proposed surgery would be an unreasonable search under the fourth amendment in the face of this uncertainty).

be deferential to the interpretation of facts offered by the government.

In *McCleskey v. Kemp*, Justice Brennan wrote an eloquent dissent that responded to the Court's dismissal of the petitioner's eighth amendment claim.[15] The petitioner challenged the Georgia capital sentencing system, alleging that it operated in a racially discriminatory manner in violation of the eighth and fourteenth amendments.[16] In support of the claim, the petitioner relied on the Baldus study, a large empirical study that showed a disparity in the imposition of the death penalty based on the murder victim's race, and, to a lesser degree, on the defendant's race. The study considered 230 nonracial factors that might legitimately influence a sentencer, but concluded that the jury more likely than not would have spared the petitioner's life had his victim been black.[17]

The Court in *McCleskey* dismissed the eighth amendment claim because it was impossible to prove the influence of race on any particular sentencing decision, based on the Baldus study. The Court assumed the validity of the Baldus study and acknowledged that the petitioner showed a risk that racial prejudice played a role in his sentencing. It nonetheless concluded that the probability of prejudice was insufficient to find a constitutional violation.[18]

Justice Brennan focused his dissent on the eighth amendment claim. He noted that under prior precedent, defendants challenging their death sentences based on eighth amendment claims had not been required to show that impermissible considerations were the "but for" cause (or "cause in fact") of their sentencing decisions. Instead, the defendants had been allowed to demonstrate that the system under which they were sentenced posed a significant risk of such an occurrence.[19] Justice Brennan concluded that McCleskey's claim differed in one important aspect from these earlier cases. His claim was the "first to base a challenge not on speculation about how a system might operate, but on empirical documentation of how it does operate."[20] Justice Brennan contended that the empir-

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[15] 481 U.S. 279, 320–45 (1987) (Brennan, J., dissenting).

[16] *Id.* at 286.

[17] *Id.* at 325 (Brennan, J., dissenting).

[18] *Id.* at 308.

[19] *Id.* at 323–24 (Brennan, J., dissenting).

[20] *Id.* He further stated:

> The challenge to the Georgia system is not speculative or theoretical; it is empirical. As a result, the Court cannot rely on the statutory safeguards in discounting McCleskey's evidence, for it is the very effectiveness of those safeguards that such evidence calls into question. While we may hope that a model

ical conclusions of the Baldus study should have forced the Court to confront the failure of the state's capital punishment procedures to safeguard the rights of criminal defendants.

The Court's insistence on a requirement that the influence of race must be shown to be the "but for" cause of a particular sentencing decision means, however, that modern empirical studies that quantify risk are irrelevant to this kind of constitutional decision-making. Modern empirical science no longer relies on the assumption of "but for" causation or "cause in fact," which was based on the Newtonian view that an absolute causal connection could be deduced from events. Instead, the modern concept of causality ("causal tendency" or "causal linkage") is based on the view of contemporary physics and epidemiology that we can only determine the chances (or risk) of a causal connection through inductive reasoning.[21] The kind of mathematical analysis used in the Baldus study is best suited to identify institutional effects on aggregates of people and to isolate impermissible factors that probably account for these effects.[22]

Justice Brennan further emphasized, however, that the significance of the Baldus study could be determined only if considered in the proper social context. He stated that "[e]valuation of McCleskey's evidence cannot rest solely on the numbers themselves. We must also ask whether the conclusion suggested by those numbers is consonant with our understanding of history and human experience."[23] He then conducted a historical review of the dual system of criminal punishment based on race in the past 150 years in Georgia.[24] He concluded that this history was consistent with the quantitative findings of the Baldus study.[25] Justice Brennan's insistence on considering the study's findings in light of known facts is

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of procedural fairness will curb the influence of race on sentencing, "we cannot simply assume that the model works as intended; we must critique its performance in terms of its results."

Id. at 338 (quoting Hubbard, *"Reasonable Levels of Arbitrariness" in Death Sentencing Patterns: A Tragic Perspective on Capital Punishment*, 18 U.C. DAVIS L. REV. 1113, 1162 (1985)) (Brennan, J., dissenting).

[21] The legal concept of causal tendency or causal linkage in tort law, which is consistent with this modern scientific notion of cause, was developed by Dean Guido Calabresi. *See* Calabresi, *Concerning Cause and the Law of Torts: An Essay for Henry Kalven, Jr.*, 43 U. CHI. L. REV. 69, 71 (1975).

[22] *McCleskey*, 481 U.S. at 327 (Brennan, J., dissenting).

[23] *Id.* at 328.

[24] *Id.* at 329–33 (Brennan, J., dissenting).

[25] *Id.* at 334 (Brennan, J., dissenting).

a technique routinely employed by epidemiologists to determine causality. From a purely scientific view, the context of the empirical study is important to understand in order to determine its true significance.[26]

Thus, Justice Brennan's careful consideration of the empirical evidence sharply contrasted with the Court's view in *McCleskey* that this evidence was irrelevant because it could show only a risk of improper racial discrimination. This difference in approaches may be attributable to a disagreement over the degree of deference that the Court should give to state legislatures.[27] The Court emphasized that state legislatures were in a better position than the Court to evaluate the statistical evidence.

In response, Justice Brennan argued that close scrutiny by the judiciary was warranted especially when the constitutional rights of a criminal defendant are at stake in a capital case. He acknowledged, however, the gravity of judicial intervention, given that more than two-thirds of states implement capital punishment laws. But because "capital punishment is the most awesome act that a State can perform," he concluded that "[t]he judiciary's role in the society counts for little if the use of governmental power to extinguish life does not elicit close scrutiny."[28] Thus, Justice Brennan believed that the Court had a constitutional duty to scrutinize the substance of the empirical evidence to determine its social significance.

This willingness to review independently the substance of scientific evidence, rather than defer to a legislature's analysis, is further illustrated by Justice Brennan's opinion in *Craig v. Boren*.[29] In that case, the Court held that an Oklahoma statute that prohibited the sale of 3.2% beer to males under the age of twenty-one and to females under the age of eighteen constituted a gender-based dis-

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[26] C. HENNEKENS & J. BURING, EPIDEMIOLOGY IN MEDICINE 40–41 (1987).

[27] Justice Powell in his opinion for the Court concluded:

> McCleskey's arguments are best presented to the legislative bodies. It is not the responsibility—or indeed even the right—of this Court to determine the appropriate punishment for particular crimes. It is the legislatures, the elected representatives of the people, that are "constituted to respond to the will and consequently the moral values of the people." Legislatures also are better qualified to weigh and "evaluate the results of statistical studies in terms of their own local conditions and with a flexibility of approach that is not available to the courts."

Id. at 319 (quoting Furman v. Georgia, 408 U.S. 238, 383 (1972) and Gregg v. Georgia, 428 U.S. 153, 186 (1976) (citations omitted)).

[28] *Id.* at 342 (quoting *Furman*, 408 U.S. at 319) (citation omitted).

[29] 429 U.S. 190 (1976).

crimination that denied males eighteen to twenty years of age the equal protection of the laws.[30] Justice Brennan, writing for the Court, accepted for purposes of discussion that the state legislature's objective was traffic safety, and he examined the statistical evidence offered by the state to decide if "the gender-based distinction closely serves to achieve that objective."[31]

The State of Oklahoma justified the gender distinction based on several studies, the most important of which was an analysis of arrests in one year that demonstrated that eighteen to twenty year-old male arrests for drunken driving substantially exceeded female arrests for that same age period.[32] Justice Brennan first disputed the social significance of the difference between genders. He observed that the statistics showed that .18% of females and 2% of males in the eighteen to twenty year-old age group were arrested for drunken driving. Although acknowledging that this difference was not statistically trivial, he asserted that it did not justify that males and females be treated differently.

He observed that the Court had previously been confronted with larger statistical differences between sexes and that the Court had concluded that these differences did not justify imposing requirements that discriminated based on gender. Furthermore, the empirical studies did not measure "the use and dangerousness of 3.2% beer as opposed to alcohol generally, a detail that is of particular importance since, in light of its low alcohol level, Oklahoma apparently considers the 3.2% beverage to be 'nonintoxicating.'"[33] Finally, the statute prohibited only the selling of 3.2% beer to young males and not their drinking the beverage. Thus, the gender-based difference was not substantially related to the achievement of the statutory objective of enhancing traffic safety.[34]

Although he doubted the need to "belabor" the analysis of the statistical studies,[35] Justice Brennan's rejection of the state's argu-

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[30] *Id.* at 210.

[31] *Id.* at 199–200. Apparently, the Oklahoma legislature did not preserve its legislative history materials that would have revealed its actual justification. *Id.* at 199–200 n.7. The Court, however, accepted as "adequate the appellee's representation of legislative purpose," rather than reject the legislation because of the lack of documentation. Notably, Justice Brennan did not rely on the fact that it was unclear whether the legislature actually considered the statistical studies at issue. Rather, he assumed the legislature relied on the empirical information in formulating the provisions that were being challenged.

[32] *Id.* at 200–01.

[33] *Id.* at 203.

[34] *Id.* at 204.

[35] *Id.*

ment was almost entirely based on a substantive review of the statistical evidence. Indeed, his opinion in *Boren* directly implied that a State must provide stronger empirical evidence to justify gender discrimination.[36] In a sharply worded dissent, Justice Rehnquist argued that the state legislatures should be entitled to deference in their evaluation of statistical studies.[37] Justice Brennan refused, however, to concede that state legislatures were entitled to such deference. Rather, he stated: "It is unrealistic to expect either members of the judiciary or state officials to be well versed in the rigors of experimental or statistical technique."[38] Because the statistical evidence failed to justify the state legislature's variance from "the normative philosophy that underlies the Equal Protection Clause," it appeared that he required a rather high standard of proof.[39]

In sum, Justice Brennan has been willing to hold the government accountable by insisting that the Court evaluate independently the scientific information and its social significance and not defer to legislatures when the issues involve the Bill of Rights. Such a willingness to engage in scientific or empirical analysis may be useful to a liberal, activist judge such as Justice Brennan in several ways. If fairly done, scientific fact-finding imparts a sense of objectivity to a position that may otherwise be criticized as a political or personal vision. Furthermore, in cases like *McCleskey*, such information incorporates empirical observations about contemporary society and hence allows constitutional interpretation to respond to changing times. Moreover, from the standpoint of a liberal judge, rationalism

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[36] Perhaps, because of this implication, Justice Powell wrote a concurring opinion that stated explicitly his uneasiness with "some of the discussion concerning the appropriate standard for equal protection analysis and the relevance of the statistical evidence." *Id.* at 210 (Powell, J., concurring). He also stressed the importance of the statute that was "so easily circumvented as to be virtually meaningless" to the determination that the "gender-based classification does not bear a fair and substantial relation to the object of the legislation." *Id.* at 211 (Powell, J., concurring).

[37] Justice Rehnquist wrote:

> The Court's criticism of the statistics relied on by the District Court conveys the impression that a legislature in enacting a new law is to be subjected to the judicial equivalent of a doctoral examination in statistics. Legislatures are not held to any rules of evidence such as those which may govern courts or other administrative bodies, and are entitled to draw factual conclusions on the basis of the determination of probable cause which an arrest by a police officer normally represents. In this situation, they could reasonably infer that the incidence of drunk driving is a good deal higher than the incidence of arrest.

Id. at 224 (Rehnquist, J., dissenting).

[38] *Id.* at 204.

[39] *Id.* Justice Brennan further stated: "This merely illustrates that proving broad sociological propositions by statistics is a dubious business." *Id.*

may promote liberal and progressive values. For example, promoting accuracy may be consistent with liberal values when determining whether there are adequate procedural safeguards in welfare termination hearings.[40] Finally, the reliance on scientific or empirical evidence may have a legitimizing power because of the persuasive authority that society extends to the scientific community.

Thus far, this article has discussed two cases in which Justice Brennan has refused to defer to legislatures in the evaluation of empirical information. He relied heavily on empirical evidence in *McCleskey* to justify his position that the death penalty system should be reformed, based on the risk of racial prejudice to criminal defendants. In *Boren*, Justice Brennan held that empirical studies submitted by a state were constitutionally insufficient to justify a legislative reform to a state law that included a gender-based distinction. Justice Brennan's insistence on an independent evaluation by the Court of empirical studies in constitutional law contrasts sharply, however, with his general deference to agency fact-finding in administrative law.

II. Use of Scientific and Empirical Evidence in Administrative Law

> Under our jurisprudence, it is presumed that ill-considered or unwise legislation will be corrected through the democratic process; a court is not permitted to distort a statute's meaning in order to make it conform with the Justices' own views of sound social policy . . . . According to the plurality, a standard is not "reasonably necessary or appropriate" unless the Secretary is able to show that it is "at least more likely than not," that the risk he seeks to regulate is a 'significant one.' . . . The critical problem in cases like the ones at bar is scientific uncertainty . . . . [T]he magnitude of the risk cannot be quantified at this time . . . . Because today's holding has no basis in the Act, and because the Court has no authority to impose its own regulatory policies on the Nation, I dissent.[41]

Given Justice Brennan's activism in interpreting the Bill of Rights, his restraint in the area of administrative regulation may

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[40] *See, e.g.*, Goldberg v. Kelley, 397 U.S. 254, 264–65 (1975) (indicating that a public interest exists in accuracy of pretermination hearings of welfare benefits).

[41] Industrial Union Dep't v. American Petroleum Inst., 448 U.S. 607, 688–91 (Marshall, J., dissenting) (hereafter referred to as the *Benzene* case). Justice Brennan joined Justice Marshall's dissenting opinion.

appear remarkable. Unlike Justice William Douglas who established a reputation for his activism in construing both the Bill of Rights and in administrative law,[42] Justice Brennan typically sided with the Court majority in deferring to the expertise of administrative agencies on regulatory issues.[43] He refused to construe broadly statutory language in an activist manner to create substantive or procedural rights.[44]

For example, Justice Brennan displayed considerable deference to agency fact-finding involving statistical and economic evidence in his opinion for the Court in *Securities and Exchange Commission v. New England Electric System*.[45] Section 11(b)(1)(A) of the Public Utility Holding Company Act of 1935 prohibited a public utility holding company from retaining an integrated electric system unless it could not be operated separately without a loss of economies causing a serious impairment to itself. The Court of Appeals for the First Circuit scrutinized the statistical evidence relied on by the agency and concluded that the agency had erred in determining that a particular gas utility had failed to prove a case for retention of its integrated gas system.

Justice Brennan concluded that the lower court should have affirmed the agency's order because its determination that divestiture of the gas system would not entail a loss of economies likely to cause serious impairment of the system involved the application of expert judgment that had adequate support in the record.[46] Justice

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[42] *See, e.g.*, Permian Basin Area Rate Cases, 390 U.S. 747, 829–45 (1968) (the Court opinion expressing deference to the agency's expertise in rate regulation; Justice Douglas in dissent).

[43] *See, e.g.*, Chevron U.S.A. Inc. v. NRDC, 467 U.S. 837 (1984); Duke Power Co. v. Carolina Envtl. Study Group, Inc., 438 U.S. 59 (1978); Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519 (1978).

[44] *See, e.g.*, Baltimore Gas & Elec. Co. v. NRDC, 462 U.S. 87 (1983) (upholding validity of agency's zero-release assumption for storage of nuclear wastes); FPC v. Florida Power and Light Co., 404 U.S. 453 (1972) (expressing deference to agency's reliance on expert opinion concerning nature of electricity). Even where Justice Brennan joined an opinion for the Court that overturned an agency's decision, he emphasized the importance of ordinarily recognizing deference to agency expertise. In Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins. Co., 463 U.S. 29, 46 (1983), the Court held that an agency's action in rescinding a standard requiring passive restraints in cars was arbitrary and capricious. Justice Brennan joined the Court opinion authored by Justice White. The Court emphasized, however, that the ordinary, arbitrary and capricious standard should apply, but found the agency's action unreasonable even under this standard after analyzing empirical studies. *See id.* at 51–54. The Court further emphasized that the agency had exceeded its congressional mandate.

[45] 390 U.S. 207 (1968).

[46] He noted:

> The dissection and application of an economic projection is a function Congress committed to the Commission, not the courts. A court may believe it would have done the job differently and better; but judicial inquiry must be addressed

Brennan thus emphasized that courts should not "indulge[] in an unwarranted incursion into the administrative domain."[47] Rather than conducting the independent review of statistical evidence as in *McCleskey*, Justice Brennan emphasized the importance of deferring to agency expertise.

An example of Justice Brennan's refusal to join the Court in imposing a requirement of scientific evidence is *Industrial Union Department v. American Petroleum Institute* ("the *Benzene* case").[48] In that case, the Court held that the Occupational Safety and Health Act of 1970 (OSHA) required the agency to demonstrate a significant risk of health impairment before lowering its permissible exposure limit in the workplace environment for benzene from ten ppm to one ppm (parts per million). In the plurality opinion by Justice Stevens, the Court conducted a detailed review of the scientific evidence relied on by the agency to justify its regulation.[49] It concluded that the agency's rationale for lowering the permissible exposure limit from ten ppm to one ppm was not based on a scientific finding that leukemia was caused by exposure to ten ppm of benzene, but would not be caused by exposure to one ppm. Rather, the agency relied on a series of assumptions indicating that some cases of leukemia might result from exposure to ten ppm and that the number of cases might be reduced by lowering the exposure.[50] The Court held this scientific evidence as an inadequate justification.

The plurality opinion required that the agency must show, on the basis of substantial evidence, that it is more likely than not that exposure to ten ppm of benzene constitutes a significant risk of material health impairment.[51] Although the "significant risk" requirement was not explicitly stated in the Act, the plurality concluded that this requirement could be implied from section 3 (8) that required the agency to promulgate standards that are "reasonably necessary or appropriate to provide safe or healthful employment and places of employment."[52] This was quite a liberal construc-

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> to whether what the Commission did is fatal to its ultimate conclusion that the holding company failed to carry its burden of showing a loss of "substantial economies . . ."

Id. at 219.

[47] *Id.* at 211.

[48] 448 U.S. 607 (1980).

[49] *Id.* at 631–38.

[50] *Id.* at 634.

[51] *Id.* at 652–58.

[52] *Id.* at 642; *see also id.* at 639–46.

tion of the statute because nowhere in the statute was a showing of a "significant risk" explicitly required.

Justice Brennan joined Justice Marshall's dissent that stressed the limitation of the Court's authority "to impose its own regulatory policies on the Nation."[53] Justice Marshall contended that the agency carefully considered the problem and found that the number of lives saved by the proposed regulation was appreciable, but that it was presently impossible to calculate precisely the health benefits.[54] He concluded that the best available evidence favored the adoption of the new regulation.

Justice Marshall also reviewed the scientific evidence in detail and concluded that it showed that there was no safe level of benzene and that the extent of risk would decline with the exposure level.[55] He concluded that this finding should satisfy the requirement that an agency's determinations are supported by substantial evidence on the record.[56] He pointedly noted that: "The plurality's 'threshold finding' requirement is nowhere to be found in the Act and is antithetical to its basic purposes. 'The fundamental policy questions appropriately resolved in Congress . . . are *not* subject to re-examination in the federal courts under the guise of judicial review of agency action.'" Thus, in the *Benzene* case, Justice Brennan joined the dissent in concluding that the Court should not engage in activism by imposing a requirement of empirical evidence of human risk to justify new regulations.

In sum, Justice Brennan's positions in administrative law cases consistently support his refusal to imply a requirement of empirical or scientific evidence to justify regulations. In administrative law cases, he has emphasized judicial restraint. These cases sharply contrast with Justice Brennan's opinion in *Boren*, where he implied that a state was required to present stronger statistical evidence to justify a gender-based distinction. It appears that the most significant and obvious difference between the *Boren* and *Benzene* analyses

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[53] *Id.* at 691 (Marshall, J., dissenting).

[54] He noted that the wording of section 6(b)(5) required the agency to:

> set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life.

29 U.S.C. § 655(b)(5) (1988).

[55] 448 U.S. at 700–01 (Marshall, J., dissenting).

[56] *Id.* at 723 (Marshall, J., dissenting).

was based on the constitutional/administrative law distinction.[57] Thus, Justice Brennan displayed a general willingness to be an activist judge in constitutional law, while showing judicial restraint in administrative law.

III. Justifications for Justice Brennan's Differing Approaches

> [When I] was admitted to the New Jersey Bar . . . the preoccupation of the profession, bench and bar, was with questions usually answered by application of state common law principles or state statutes. Any necessity to consult federal law was at best episodic. But those were also the grim days of the Depression, and its cure was dramatically to change the face of American law. The year 1933 witnessed the birth of a plethora of new federal laws and new federal agencies developing and enforcing those laws . . . .
>
> In recent years, however, another variety of federal law—that fundamental law protecting all of us from the use of governmental powers in ways inconsistent with American conceptions of human liberty—has dramatically altered the grist of the state courts . . . . Supreme Court decisions under the fourteenth amendment have significantly affected virtually every other area, civil and criminal, of state action.[58]

The two major revolutions in American law that occurred during Justice Brennan's lifetime were the development of federal administrative law and the incorporation of the Bill of Rights as applicable to the states through the fourteenth amendment. During his years in private practice and as a state court judge, the legal community was debating the controversial relationship between the New Deal agencies and the courts. Moreover, the Justice joined the Supreme Court when it was initiating the incorporation of the Bill of Rights. His differing approaches to analyzing scientific and em-

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[57] This distinction is also consistent with Justice Brennan's willingness to impose additional procedures on administrative agencies based on procedural due process requirements in Goldberg v. Kelley, 397 U.S. 254 (1970), while joining the Court in refusing to impose additional procedural requirements not explicit in the Administrative Procedure Act in Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519 (1978), through administrative law interpretation.

[58] Brennan, *State Constitutions and the Protection of Individual Rights*, 90 Harv. L. Rev. 489, 489–91 (1977).

pirical evidence in these two areas of law are, therefore, of particular interest.

There are several possible explanations for Justice Brennan's willingness to conduct an independent inquiry of legislative findings based on scientific or empirical evidence in constitutional law, but his refusal to do so in the administrative cases. First, he perhaps believes that the administrative agency has better institutional capabilities than the Court in analyzing scientific or empirical data. Judges are usually not formally trained in statistical or scientific disciplines. Furthermore, scientific information is not likely to be as fully developed in an adversarial setting as in an administrative one. If this explanation is credible, however, it is not clear why he should believe that the Court is more able than state legislatures or Congress to evaluate empirical or scientific information in constitutional cases. It is not readily apparent that judges have greater scientific or statistical skills than legislative staffs or that the adversarial setting of Supreme Court cases is advantageous over research conducted by congressional aides and consultants.

An alternative explanation is that the wording of the Constitution is often broad, e.g., "equal protection" and "due process," whereas administrative statutes are detailed regulatory schemes, including explicit limitations on judicial review. Thus, there may be sufficient flexibility to interpret the Constitution to require a sufficient scientific justification, whereas this latitude is lacking in administrative law. Upon reflection, however, it seems that the language in statutes, including the Administrative Procedure Act, contains broad language, e.g., "arbitrary and capricious" and "substantial evidence on the record." Certainly, the splits among and within federal circuits demonstrates the latitude of possible interpretations of administrative statutes. The sharp differences in interpretation among federal judges indicate that administrative statutes are not so specific and precise as to deny an avowed activist judge latitude in interpretation.[59] The *Benzene* case illustrates that judicial activism can occur in administrative law through an innovative reading of the statute.[60]

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[59] Compare the majority and dissenting opinions in American Textile Mfg. Inst., Inc. v. Donovan, 452 U.S. 490, 508–12 (1981) (holding that a cost-benefit analysis was not required under the Occupational Safety and Health Act because the statute only explicitly contained a feasibility requirement). Justice Brennan wrote the opinion for the Court.

[60] *See* Shapiro & Levy, *Heightened Scrutiny of the Fourth Branch: Separation of Powers and the Requirement of Adequate Reasons for Agency Decisions*, 1987 DUKE L.J. 387, 401.

Another explanation for the constitutional and administrative law distinction is that Justice Brennan is result-oriented. Although he has strong convictions about individual rights under the Constitution, he may feel less strongly about environmental or other concerns that are regulated by administrative agencies.[61] In knowing the Justice, however, I find this explanation the least likely. For example, he has revealed his deep concern for the environment in his Takings Clause jurisprudence.[62] Furthermore, his expressed sympathy for individual rights seems more consistent with protecting consumers, rather than being pro-business. Despite these sympathies, he tended to side with the agency's decision rather than to side consistently with consumers or businesses.[63]

I believe that the strongest explanation for his divergent approaches in constitutional law and administrative law arises from his philosophy concerning the separation of powers' doctrine. In *Northern Pipeline Construction Co. v. Marathon Pipe Line Co.*,[64] he explained that "a critical difference [exists] between rights created by federal statute and rights recognized by the Constitution."[65] This difference is, according to Justice Brennan, based on two fundamental principles:

> First, it is clear that when Congress creates a substantive federal right, it possesses substantial discretion to prescribe the manner in which that right may be adjudicated—including assignment to an adjunct of some functions historically performed by judges . . . . [W]ith respect to congressionally created rights, some factual determinations may be made by a specialized factfinding tribunal designed by Congress, without constitutional bar. Second, the functions of the adjunct must be limited in such a way that 'the essential attributes' of judicial power are retained in the Art. III court . . . .[66]

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[61] *See supra* note 43.

[62] *See, e.g.*, Nollan v. California Coastal Commission, 483 U.S. 825, 842–64 (1987) (Justice Brennan dissenting from Court's decision to strike down a California Coastal Commission requirement that building permits be conditioned upon property owner's granting a public easement for beach access).

[63] *See supra* notes 43 & 44.

[64] 458 U.S. 50 (1982). In *Northern Pipeline*, the Court held that Article III bars Congress from establishing under its Article I powers legislative courts to exercise jurisdiction over all matters arising under the bankruptcy laws.

[65] *Id.* at 83.

[66] *Id.* at 80–81.

Thus, Congress may assign to administrative agencies the function of making factual determinations that are necessary to define congressionally-created rights. This assignment presumably includes the power to make the determination of the adequacy of the scientific or empirical support necessary to implement the congressionally-created rights.[67] Article III courts are limited to ensuring that the agency is obedient to the intent of Congress.[68] Congress may not, however, deprive the Court of the determination of facts upon evidence when a constitutional right may be involved.[69] Thus, the Court retains plenary authority, including the power to rely on its own evaluation of scientific information, in constitutional fact-finding.

Justice Brennan's willingness to engage in scientific fact-finding may have been based not on practical wisdom, but simply because he believed that the Constitution required it. This willingness, however, is also consistent with his belief that the Constitution is a living document and that it should reflect the insights and knowledge of contemporary society. The use of current scientific information may be necessary to interpret the Constitution. In addition, this view respects the fact-finding authority of administrative agencies to promulgate regulations based on their specialized knowledge as long as no infringement of constitutional rights results. Justice Brennan's approach permits both constitutional and administrative law-making to respond to dynamic changes in science and technology and thus arguably ensures the proper "progress of the law."

IV. CONCLUSION

Our institutional responses to social problems should be shaped by current scientific knowledge. Increasingly, large-scale empirical studies are conducted that provide invaluable information about the competencies and failings of social institutions. As Justice Brennan has suggested, however, it is vital to consider scientific knowl-

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[67] "[W]hen Congress creates a statutory right, it clearly has the discretion, in defining that right, to create presumptions, or assign burdens of proof, or prescribe remedies." *Id.*

[68] It is my personal speculation that Justice Brennan's philosophy concerning administrative agencies may have been shaped by his administrative law professor, Felix Frankfurter. *See* Brennan, *supra* note 58, at 489. Professor Frankfurter was a public advocate of many New Deal programs, including administrative agencies. Justice Frankfurter held the view that judicial review of administrative actions should be restrained in deference to administrative expertise. *See* S. BREYER & R. STEWART, ADMINISTRATIVE LAW AND REGULATORY POLICY 28 (1979).

[69] *Northern Pipeline*, 458 U.S. at 82.

edge in its proper social context. While the scientific culture emphasizes "provability," the legal culture focuses on "persuasiveness." We should determine the legal significance of scientific information by assessing it in light of its social context. Justice Brennan believes that the main responsibility for this assessment lies in Article III courts on constitutional issues and in non-Article III forums on administrative matters.

In Justice Brennan's view, scientific information has a vital role in the interpretation of the Constitution. Studious evaluation of scientific and empirical information may force us to reconsider the fundamental fairness of social institutions. It may also require the Court to articulate more clearly the importance of nonquantitative moral values. Scientific and empirical fact-finding renews and reinvigorates constitutional lawmaking.

It is most fitting to end this tribute with his words:

> It is time I close. My theme has been that the revolution of rising expectations has vast implications for constitutional law but that the role of the Court will remain that of interpreting the Constitution to hold true to its great design. If we see last Term's few decisions resolving conflicts between the individual and the government in favor of the state as a departure, nevertheless we know that it is a departure that must be short-lived, for in our society the quest for the freedom, the dignity, and the rights of man will never end. The quest, though always old, is never old, like the poor old woman in Yeats' play. "Did you see an old woman going down the path? [asked Bridget] I did not, [replied Patrick, who had come into the house just after the old woman left it] but I saw a young girl and she had the walk of a queen."[70]

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[70] Brennan, *supra* note 5, at 793–94 (quoting W.B. Yeats, *Cathleen Ni Hoolihan*, in THE HOUR-GLASS AND OTHER PLAYS 49 (1916)).