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Protecting the Environment for Future Generations: A Proposal for a Republican Superagency

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PROTECTING THE ENVIRONMENT FOR FUTURE GENERATIONS: A PROPOSAL FOR A "REPUBLICAN" SUPERAGENCY

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INTRODUCTION

Environmental pollution often poses serious risks to future generations.[1] Markets primarily reflect the preferences of current consumers, may not properly discount the value of alternative future uses, and therefore, may not adequately internalize the intergenerational social costs of long-term ecological or cultural harm.[2] Structural political failure occurs as well because fu-

[1] *See generally* EDITH BROWN WEISS, IN FAIRNESS TO FUTURE GENERATIONS: INTERNATIONAL LAW, COMMON PATRIMONY, AND INTERGENERATIONAL EQUITY 2, 5-28, 34-40, 44 *passim* (1989) (discussing intergenerational equity); Daniel A. Farber & Paul A. Hemmersbaugh, *The Shadow of the Future: Discount Rates, Later Generations, and the Environment*, 46 VAND. L. REV. 267 (1993) (discussing problems of discount rates and intergenerational effects); E. Joshua Rosenkranz, Note, *A Ghost of Christmas Yet to Come: Standing to Sue for Future Generations*, 1 J.L. & TECH. 67 (1986) (discussing the use of a "posterity suit" as a means of protecting the interest of future generations in the environment).

[2] *See* CASS R. SUNSTEIN, AFTER THE RIGHTS REVOLUTION: RECONCEIVING THE REGULATORY STATE 68 (1990) (noting that markets reflect current preferences and therefore may create a kind of externality for future generations); Gordon Christenson, *In Fairness to Future Generations: International Law,*

ture generations cannot vote in today's elections. As a result, the political market is potentially even more unfair to future generations than the economic market.[3] In general, current environmental statutes do not adequately address the impact of today's pollution on future generations.[4]

Although some critics argue that the present generation owes no duties to its descendants, there are important moral reasons to protect the future. In the case of some problems such as global warming, the government should plan as far as one hundred years in the future, even if there is little popular interest in these issues.

A crucial issue is deciding whether social institutions are best equipped to protect future generations at an acceptable cost.[5] No institution is perfect at addressing any complex social problem, and therefore, one must assess the relative institutional competence of several institutions to determine which is most effective.[6] This Article, however, suggests how a relatively independent executive agency might lead efforts to protect the future.

Neither Congress nor the Executive Office of the President is well suited to protect future generations because each is primarily interested in representing today's voters. By their very nature, democratic institutions are biased in favor of current voters. Traditionally, courts have served the countermajoritarian function in our society, but judges generally lack the substantive expertise to address questions at the frontiers of science.

Currently, agencies generally focus on short-term problems because of statutory deadlines and a lack of adequate resources

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Common Patrimony, and Intergenerational Equity, 1 Y.B. INT'L ENVTL. L. 392, 395-96 (1990) (markets may fail to internalize intertemporal social costs). *But see* Stephen F. Williams, *Background Norms in the Regulatory State*, 58 U. CHI. L. REV. 419, 431 (1991) (reviewing CASS R. SUNSTEIN, AFTER THE RIGHTS REVOLUTION (1990)) (arguing that markets do take into account preferences of future generations in discounted current value, but conceding the possibility that market discount rates are either unethically or inefficiently high).

3 Williams, *supra* note 2, at 431 (arguing future generations have less influence in political markets than in economic markets because they have no vote).

4 SUNSTEIN, *supra* note 2, at 104 (noting statutes protecting future generations are often inadequately implemented).

5 Edward L. Rubin, *Institutional Analysis and the New Legal Process*, 1995 WIS. L. REV. 463, 469 (reviewing NEIL K. KOMESAR, IMPERFECT ALTERNATIVES: CHOOSING INSTITUTIONS IN LAW, ECONOMICS, AND PUBLIC POLICY (1994)).

6 *See generally* KOMESAR, *supra* note 5, at 3-10; Rubin, *supra* note 5, at 464.

for addressing long-term problems. There is also insufficient coordination of different agencies with overlapping agendas. Furthermore, the quality of environmental staffs and decisionmaking could be improved. Finally, agencies need more independence to reallocate resources from low to high priority issues.

As part of a larger debate about "civic republicanism," there has been a more specific discussion about the extent to which agencies play a positive role in improving democratic politics. At their best, agencies can play a constructive role in fostering democratic deliberation and participation regarding complex risk issues, especially those affecting future generations. To do so effectively, agencies should endeavor to achieve a careful synthesis of technical expertise and sensitivity to popular values. This Article proposes that Congress create and delegate considerable authority to a "Superagency" to review all regulations that may have a significant impact on future generations and to coordinate existing agencies. The Superagency could help future generations simply by putting their concerns high on the regulatory agenda.[7] In addition, it would be given paternalistic discretion to promote the best interests of future generations. Occasionally, it might use its discretion to act in a countermajoritarian way, but would primarily try to promote democratic deliberation and participation regarding issues involving future generations.

Is the proposal politically feasible? The Superagency would be potentially palatable to both the President and Congress because neither branch would gain or lose too much authority. Because predicting future environmental consequences involves substantial technical and political uncertainties, long-term environmental policymaking is the type of issue that Congress might be willing to delegate to an administrative agency. For the President, there would be a tradeoff between more effective coordination of environmental policy and accepting a greater degree of agency independence. The circulation of the Superagency's staff among both branches may win support from both sides.

Part I of this Article introduces the principle that the present generation owes duties to future generations. Part II argues that

[7] The control of agendas can have a significant impact in the legislative or regulatory decisionmaking process. *See* Eric J. Gouvin, *Review Essay: A Square Peg in a Vicious Circle: Stephen Breyer's Optimistic Prescription for the Regulatory Mess*, 32 HARV. J. ON LEGIS. 473, 476 (1995) (citing sources); *see generally* DANIEL A. FARBER & PHILIP P. FRICKEY, LAW AND PUBLIC CHOICE: A CRITICAL INTRODUCTION 38-42 (1991).

current environmental laws fail future generations. Part III argues that neither Congress nor the executive branch can protect future generations from environmental harms due to short-term political pressures. Part IV evaluates the current capabilities of agencies to plan for long-term environmental problems. Part V evaluates whether agencies may be capable of better long-term planning by creating a dialogue with the public. Part VI proposes a Superagency to protect the environmental interests of future generations. The Superagency would be independent of Congress and the executive branch and be allowed a measure of limited paternalism to protect future generations, tempered by a requirement to foster public sensitivity to future needs.

I

SHOULD WE CARE ABOUT THE FUTURE? WILL WE CARE?

Commentators have disagreed about whether the present generation owes duties to future generations, and how far into the future those obligations extend. Those who strongly believe that we owe obligations to the future often pose the question of what we would want the present generation to do if we stood in the shoes of some future unborn generation. These same people frequently propose that the present generation has a fiduciary responsibility to see that future generations enjoy a parity of social value and opportunity.[8]

Commentators who argue that society owes no obligations to the future make two major arguments. First, there is the epistemological objection that the present generation cannot know either the value preferences of future generations or predict the physical conditions in which they will live, especially far into the future.[9] While there is some truth to the epistemological objec-

[8] *See generally* BRUCE ACKERMAN, SOCIAL JUSTICE IN THE LIBERAL STATE 203 (1980) (arguing that people alive today should have no priority over the unborn because "all citizens are at least as good as one another regardless of their date of birth"); JOHN RAWLS, A THEORY OF JUSTICE 284-93 (1971) (arguing that each generation should set aside some capital for future generations until just institutions are firmly established and suggesting that the temporal priority of people alive today yields them no moral priority); MARK SAGOFF, THE ECONOMY OF THE EARTH: PHILOSOPHY, LAW, AND THE ENVIRONMENT 63 (1988) (citation omitted) ("Our obligation to provide future individuals with an environment consistent with ideals we know to be good is an obligation not necessarily to those individuals but to the ideals themselves.").

[9] *See generally* FERNAND BRAUDEL, ON HISTORY (S. Mathews trans., 1980) (doubting a given science could predict historically into the future); Christopher

tion, that argument is weaker when we are concerned with making decisions that affect only those living one or two generations into the future.[10] Furthermore, there are some values such as preserving human health, species diversity, and natural beauty that are unlikely to change, at least in the near future.[11]

The second objection to planning for the future is ontological. Because future generations do not yet exist, the present generation cannot be statutorily or morally obligated to act upon their behalf.[12] In particular, because our actions in pursuing one policy over another determine the composition of any future generation, it is pointless to act for any future generations' benefit.[13] That argument ignores, however, our ability to benefit a future generation regardless of which specific individuals comprise it.[14] Furthermore, because our choices about consumption and the environment will in fact determine, at least in part, both who will live in the future and what values they will hold, we bear a heavy responsibility to make the human race better, not even worse, than it already is.[15] It is possible to avoid the ontological argument if we owe a duty to act responsibly not to our descendants, but to all species and the environment in general.[16]

D. Stone, *Beyond Rio: "Insuring" Against Global Warming*, 86 AM. J. INT'L L. 445 (1992). Stone writes:

> One answer is that it is almost fatuous to worry about how people will live ninety years from now—in particular, to presume what their prime concerns will be—in light of technologies and tastes and intervening disruptions we can only surmise, from fusion and superconductivity to meteors. How accurately could those living in 1900 have predicted and provided for the problems that face us?

Id. at 447-48.

[10] Jeffrey Spear, Comment, *Remedy Selection Under CERCLA and Our Responsibilities to Future Generations*, 2 N.Y.U. ENVTL. L.J. 117, 124, 128 (1993).

[11] *Id.* at 124, 129-30.

[12] *Id.* at 124-25.

[13] Anthony D'Amato, *Do We Owe a Duty to Future Generations to Preserve the Global Environment?*, 84 AM. J. INT'L L. 190, 190-92 (1990) (arguing that society does not owe a duty to the future because our very act of discharging that duty wipes out the very individuals to whom we allegedly owed that duty); *see also* Spear, *supra* note 10, at 125-26 (summarizing the ontological objection).

[14] Spear, *supra* note 10, at 125-26. *But see* D'Amato, *supra* note 13, at 194 (arguing that the fact that we can benefit a generic future generation rather than any specific individual glosses over the fact that future generations are not an abstraction).

[15] SAGOFF, *supra* note 8, at 61-63.

[16] D'Amato, *supra* note 13, at 197-98.

Some commentators take a pragmatic view based upon how people generally treat their children and grandchildren and contend that the current generation does not bear a fiduciary duty to maximize the income of or to preserve the entire corpus for future generations, but simply to act responsibly and not to impose undue hardships on their own descendants.[17] This Article agrees that the present generation owes special obligations to our children and grandchildren, but would also take reasonably cost-effective steps to protect more distant generations to the extent that society can reasonably make predictions, perhaps 100 years into the future.

The present generation should not make sacrifices to marginally improve the lives of distant future generations, but should try to avoid creating substantial risks of future disaster.[18] The question is which institutions are capable of protecting those who will live in the year 2100.

II
CURRENT ENVIRONMENTAL LAW FAILS THE FUTURE

A. *Defining Intergenerational Environmental Equity*

Because future generations are not represented in making decisions today, the present generation may either choose to benefit from the depletion of nonrenewable resources and elimination of renewable resources at the expense of future generations, or to take actions which benefit future generations.[19]

1. *Depletion of Resources*

There are at least three ways in which the present generation may deplete resources, often with irreversible consequences, and thereby come into conflict with the interests of future genera-

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[17] Members of the current generation are probably unwilling to make greater sacrifices for anonymous members of future generations than for their own personal descendants. *See* Farber & Hemmersbaugh, *supra* note 1, at 294-95. Because the present generation is in a better position to know and to shape the preferences of their children and grandchildren, society arguably owes a greater obligation to its children and grandchildren than to more distant generations. Farber & Hemmersbaugh, supra note 1, at 295.

[18] Farber & Hemmersbaugh, *supra* note 1, at 294-95.

[19] *See* WEISS, *supra* note 1, at 5. Recently, much attention has been paid to the need to preserve biological diversity. *See generally* Christopher D. Stone, *What To Do About Biodiversity: Property Rights, Public Goods, and the Earth's Biological Riches*, 68 S. CAL. L. REV. 577 (1995).

tions:[20] first, by depleting higher quality resources, leading to higher real prices of resources for future generations; second, by consuming potentially valuable resources;[21] and third, by exhausting resources, resulting in the narrowing of the range of available natural resources.

Some economists would argue against the possibility of a rise in real prices of natural resources on the grounds that society has an infinite capacity to substitute resources or to improve extraction technology, or postulate that higher prices for resources can be met by the greater wealth generated from the present consumption of resources.[22]

However, it is questionable whether future generations will be able to find alternative energy supplies at real prices comparable to oil and gas today, or to discover inexpensive alternatives for products derived from species of plants and animals that are becoming extinct.[23] If we assume that the real price of a given natural resource will increase in the future, there is no guarantee that future generations will inherit sufficient wealth, capital, or technology to offset increases in the price of natural resources relative to other items.[24] For biological resources such as mammals, portfolios of germplasm, or marine resources of the global commons areas, there are serious market failure problems. A non-eliminable public good problem results from these assets being underpriced, altogether unpriced, or even subsidized out of existence, at tremendous potential loss to future generations.[25] Finally, the loss of species and natural or cultural resources may pose both economic and intangible losses to future generations.[26]

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20 WEISS, *supra* note 1, at 6-9.

21 An example is the current exploitation of natural gas reserves containing helium, a potentially valuable resource, which is simply released into the air. WEISS, *supra* note 1, at 8.

22 If a rise in real prices occurs, these economists would contend that the increase results from higher labor costs or costs of other factors in the production process. WEISS, *supra* note 1, at 6.

23 WEISS, *supra* note 1, at 6-7.

24 WEISS, *supra* note 1, at 6-7.

25 *See* Douglas R. Williams, *Valuing Natural Environments: Compensation, Market Norms, and the Idea of Public Goods*, 27 CONN. L. REV. 365 (1995) (arguing it is essentially impossible to put a price on the value of environment and that restoration to status quo ante is morally required).

26 *See* SAGOFF, *supra* note 8, at 60-65; WEISS, *supra* note 1, at 8-9.

2. *Degradation in Environmental Quality*

The present generation's degradation of the natural environment will often damage its utility for future generations because it frequently takes a long time for natural or even man-made processes to restore the environment.[27] Most notably, global warming resulting from the increasing concentration of greenhouse gases that trap heat, such as carbon dioxide and methane, may have long-term impacts.[28] Other types of pollution may have less dramatic, but still significant, impacts on future generations by preventing the use of lakes for swimming or drinking, destroying or diminishing certain species of animals or plants, eroding soils, or by degrading cultural resources such as historic buildings.[29] To a considerable extent, however, degradation of the environment is caused by the growth of the world's population. Future generations might prefer to live in a degraded environment rather than to exist in smaller numbers in a pristine one.[30]

3. *Distributional Consequences*

In a nation and a world in which there are enormous disparities in income, either the consumption of resources or their preservation is likely to have important distributional consequences.[31] Those who benefit from consumption often externalize the cost by placing it on future generations.[32] On the other hand, the preservation of resources for the future may be unfair to those people who currently live in extreme poverty, especially if some nations or individuals will inherit more than others.[33]

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27 WEISS, *supra* note 1, at 9-10.

28 STEPHEN BREYER, BREAKING THE VICIOUS CIRCLE 28 (1993) (arguing government should spend "more time and effort on more serious problems such as ozone, forest destruction, or climate change"); WEISS, *supra* note 1, at 10-11. *But see* Lisa Heinzerling, *Political Science*, 62 U. CHI. L. REV. 449, 466-67 (1995) (arguing that there are many uncertainties about the seriousness of ozone depletion, forest destruction, or global warming, and that adaptation to, in addition to prevention of, climate change should be considered).

29 *See* WEISS, *supra* note 1, at 11-13.

30 *See generally* D'Amato, *supra* note 13, at 193-94.

31 *See generally* Bradford C. Mank, *Environmental Justice and Discriminatory Siting: Risk-Based Representation and Equitable Compensation*, 56 OHIO ST. L.J. 329, 334-35 (1995).

32 WEISS, *supra* note 1, at 14-15.

33 *See* WEISS, *supra* note 1, at 14.

B. *Current Environmental Laws Fail the Future*

Many environmental statutes do not address whether EPA should consider the impacts of pollution on future generations. Those that do usually fail to provide sufficient guidance to the agency regarding how to allocate resources between programs that primarily reduce pollution in the short run and those that might provide greater long-term benefits to future generations.[34] Furthermore, it is difficult for EPA to engage in long-term planning, set priorities, or reallocate resources. That agency must implement several dozen separate statutes, enacted by Congress at different times, with different criteria, and different procedures for setting standards.[35]

For example, because the provisions in the National Environmental Policy Act of 1969 (NEPA)[36] regarding the rights of future generations are purely procedural, EPA lacks any substantive power to protect those rights.[37] Similarly, government appointed trustees should protect or conserve environmental resources for future generations,[38] but both the Oil Pollution

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[34] *See generally* MARY R. ENGLISH, SITING LOW-LEVEL RADIOACTIVE WASTE DISPOSAL FACILITIES 73-76 (discussing fiduciary responsibility of siting boards).

[35] Richard N. L. Andrews, *Long-Range Planning in Environmental and Health Regulatory Agencies*, 20 ECOLOGY L.Q. 515, 538 (1993); Lakshman Guruswamy, *Integrating Thoughtways: Re-Opening of the Environmental Mind?*, 1989 WIS. L. REV. 463, 463-69 *passim*.

[36] NEPA declares that, "it is the continuing responsibility of the Federal government to use all practicable means, consistent with other essential considerations of national policy, to [ensure] ... that the Nation may ... fulfill the responsibilities of each generation as trustee of the environment for succeeding generations." 42 U.S.C. § 4331(b) (1994).

[37] *See generally* Strycker's Bay Neighborhood Council, Inc. v. Karlen, 444 U.S. 223, 227-28 (1980) (citation omitted) ("Once an agency has made a decision subject to NEPA's procedural requirements, the only role for a court is to ensure that the agency has considered the environmental consequences; it cannot 'interject itself within the area of discretion of the executive as to the choice of the action to be taken.'"); William L. Andreen, *In Pursuit of NEPA's Promise: The Role of Executive Oversight in the Implementation of Environmental Policy*, 64 IND. L.J. 205, 243-45 (1989) (discussing cases holding that NEPA is only procedural); Philip Weinberg, *It's Time to Put NEPA Back on Course*, 3 N.Y.U. ENVTL. L.J. 99 (1994) (discussing cases holding NEPA is only procedural and arguing Congress intended NEPA to have substantive consequences).

[38] *See generally* Gerald M. Levine, *The Rhetoric of Public Expectation: An Enquiry into the Concepts of Responsiveness and Responsibility Under the Environmental Laws*, 8 PACE ENVTL. L. REV. 389, 414-16 (1991) (discussing trustee provision in NEPA); *see generally* Timothy Patrick Brady, Comment, *"But Most of It Belongs to Those Yet to Be Born:" The Public Trust Doctrine, NEPA, and the Stewardship Ethic*, 17 B.C. ENVTL. AFF. L. REV. 621, 643-46 (1990) (arguing

Act[39] and the Comprehensive Environmental Recovery, Compensation and Liability Act (CERCLA)[40] fail to specify how trustees should spend recovered damages from claims to compensate for harm to natural resources in the future or where to keep the money in the interim.[41]

Questions involving protection of future generations are not merely academic or speculative, but create difficult policy choices for agencies. For instance, in a recent study of Superfund sites, Professors James Hamilton and W. K. Viscusi found that "future risks account[ed] for over 90% of all the risk-weighted pathways for the Superfund sites in our sample. Chief among these future risks is the projection that future residents will reside on sites that are not currently residential."[42] Hamilton and Viscusi argue that many of these risks could be eliminated by land-use restrictions preventing residential use of highly polluted sites and containment, including fences, but that "these strategies would require a change in EPA's current legislative mandate establishing a preference for long-term effectiveness and permanence in remedy selection."[43] In 1994, proposed legislation would have allowed EPA to take into account the likely future use of a site, whether residential or industrial, and would have established Community Working Groups of up to twenty representatives to advise EPA on land use recommendations affecting future use.[44] Recently proposed legislation, however, failed to address who should represent the interests of future generations.[45] Some existing plans for cleaning up contaminated sites include recom-

NEPA has failed to incorporate public trust doctrine and is inadequate to protect future generations).

[39] 33 U.S.C. § 2706(b) (1994); *see generally* Symposium, *Oil Pollution Act Rulemaking*, 45 BAYLOR L. REV. 215 (1993).

[40] 42 U.S.C. § 9607(a)(4)(C) (1994).

[41] *See generally* Anthony R. Chase, *Remedying CERCLA's Natural Resource Damages Provision: Incorporation of the Public Trust Doctrine Into Natural Resources Damage Actions*, 11 VA. ENVTL. L.J. 353 (1992); Andrew J. Simons & James M. Wick, *Natural Resources Damages Under CERCLA: Here They Come, Ready or Not*, 63 ST. JOHN'S L. REV. 801 (1989).

[42] James T. Hamilton & W. Kip Viscusi, *Human Health Risk Assessments for Superfund*, 21 ECOLOGY L.Q. 573, 608 (1994).

[43] *Id.* at 609.

[44] H.R. 3800, 103d Cong., 1st Sess. §§ 102(g), 502(2) (1994) (stating that community working groups reasonably anticipated future uses of land); *see* Douglas A. McWilliams, Comment, *Environmental Justice and Industrial Redevelopment: Economics and Equality in Urban Revitalization*, 21 ECOLOGY L.Q. 705, 774-75 (1994) (discussing community work group proposal).

[45] *See* Mank, *supra* note 31, at 414-18.

mendations on future use, but there are no systematic standards for addressing such issues.[46]

There are a number of possible ways to protect future generations from the potential harms of, for example, a closed hazardous waste dump. To protect residents after a facility is closed, a developer could create an ex post trust fund or put up a bond to address future issues resulting from eventual closure of the site such as post-closure monitoring or the implementation of institutional controls including signs, a fence, or local land-use regulations.[47] There is evidence, however, that current financial responsibility regulations for hazardous waste operators are inadequate.[48] Perhaps the underlying reason for the inadequacy of these regulations is that future generations have no representation when regulations are written and must rely upon the good will of busy civil servants who face political pressures from the interests of the present generation.

Currently, environmental statutes and regulations pay lip service to the need to protect future generations, but are often too vague or weak to have much impact. Theoretically, Congress or existing agencies could simply write more detailed statutes or regulations addressing the needs of future generations, but such reforms are not likely until there are better institutional mechanisms to represent our descendants.

III

THE THREE BRANCHES CANNOT PROTECT THE FUTURE

Both Congress[49] and the Executive Office of the President do not tend to spend much time on long-term planning. Traditionally, courts have served the countermajoritarian function in our society, but judges generally lack the substantive expertise to address questions at the frontiers of science, and judicial review

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[46] *See generally* THE FERNALD CITIZENS TASK FORCE, RECOMMENDATIONS ON REMEDIATION LEVELS, WASTE DISPOSITION, PRIORITIES, AND FUTURE USE 45-48 (July 1995) (recommending that at former uranium processing plant, residential and agricultural uses be avoided in future; however, other uses should be considered if there is a sufficient buffer between the on-site disposal cell and any other uses of the property).

[47] Owners of hazardous waste facilities must set aside enough resources to assure site safety after closure for thirty years. 40 C.F.R. § 264.117(a)(1) (1995).

[48] *See, e.g., supra* notes 35-42 and accompanying text.

[49] *See* Daniel B. Rodriguez, *Management, Control, and the Dilemmas of Presidential Leadership in the Modern Administrative State*, 43 DUKE L.J. 1180, 1187 (1994) (arguing that "the legislature tends to have a short time horizon").

often results in too much concern with proceduralism at the expense of substance.

A. *Congress Cannot Write Long-Term Statutes*

A number of commentators have criticized the role Congress plays in setting regulatory priorities.[50] As one critic noted, "Congress seldom legislates in a systematic, multi-agency, multi-issue way; it rarely deals with the subject of regulation writ large."[51] Other critics have argued that Congress acts at the behest of special interests and pushes EPA to adopt ineffective or wasteful programs.[52] While the electoral process endows Congress with a greater degree of democratic legitimacy than administrative agencies, some commentators argue that agencies can allow broader participation by interested parties other than Congress, and that the Administrator of EPA is more accountable to the public than most individual members or even committees of Congress.[53]

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[50] *Id.* at 1184 (stating that "Congress's weaknesses as an instrument for comprehensive regulatory reform are manifold"); Mark Seidenfeld, *A Big Picture Approach to Presidential Influence on Agency Policy-Making*, 80 IOWA L. REV. 1, 5-12 (1994) (citing and discussing numerous articles critical of congressional oversight of administrative agencies).

[51] Rodriguez, *supra* note 49, at 1186.

[52] *See* Andrews, *supra* note 97, at 545 (citing sources); Steven J. Groseclose, *Reinventing the Regulatory Agenda: Conclusions From an Empirical Study of EPA's Clean Air Act Rulemaking Progress Projections*, 53 MD. L. REV. 521, 533 (1994) (writing that Congressional pressure "distorts priorities and prevents realistic agenda setting and deadline compliance"). *But see generally* Daniel A. Farber & Philip P. Frickey, *The Jurisprudence of Public Choice*, 65 TEX. L. REV. 873, 895-98 & nn.147-52 (reviewing empirical studies of legislative process and concluding that serving special interest groups is only a partial explanation of legislation); Mark Seidenfeld, *A Civic Republican Justification for the Bureaucratic State*, 105 HARV. L. REV. 1511, 1524-25 (1992).

[53] Committee influence over agency policy may not reflect the desires of the entire Congress, especially because members of Congress are often assigned to particular committees because their district has a special interest in the committee's subject matter. *See* Seidenfeld, *supra* note 50, at 11-12; Sidney A. Shapiro, *Political Oversight and the Deterioration of Regulatory Policy*, 46 ADMIN. L. REV. 1 (1994). Some commentators argue that delegation of political authority to administrative agencies can actually improve the responsiveness of government to the desires of the electorate because administrators and ultimately the President are more accountable than individual members of Congress or congressional subcommittees. *See generally* Howard Latin, *Ideal Versus Real Regulatory Efficiency: Implementation of Uniform Standards and "Fine-Tuning" Regulatory Reforms*, 37 STAN. L. REV. 1267, 1300 & n.65 (1985) (stating that agencies are more accountable to public than individual members of Congress or committees); Richard B. Stewart, *Beyond Delegation Doctrine*, 36 AM. U. L.

Congress faces special difficulty setting coherent environmental policies and especially in revising them in a timely fashion as circumstances change.[54] Because Congress enacts one statute at a time, and writes statutes in different subcommittees with overlapping jurisdiction, the institution cannot easily coordinate potentially overlapping provisions in different statutes.[55]

As a practical matter, Congress leaves much decisionmaking to agencies.[56] The fragmented congressional committee system and other structural constraints make it difficult for Congress to perform long-term planning or to guide how agencies conduct research and priority-setting. Theoretically, Congress might overcome these structural problems by creating a general committee for overseeing the regulatory process, by developing a regulatory budget that limits the cost of regulation, or by establishing a permanent staff assigned to the task of evaluating regulatory programs.[57] Congressional fragmentation itself renders the possible implementation of such measures unlikely; individual committees or members are unlikely to cede such authority to a centralized body.

Congress could use legislatively imposed procedural constraints to control agencies.[58] However, the Supreme Court's de-

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REV. 323, 331 (1987) (eliminating administrative delegation would likely result in Congress "subdelegating the legislation function to congressional committees or subcommittees whose decisions would in most cases be ratified with little or no review by the entire Congress"). *But see.* Bradford C. Mank, *What Comes After Technology: Using an "Exceptions Process" to Improve Residual Risk Regulation of Hazardous Air Pollutants*, 13 STAN. ENVTL. L.J. 263, 308-09 (1994) (arguing that society is better off when Congress as a whole enacts legislation providing clear direction for an agency's exercise of discretion).

[54] *See* Rodriguez, *supra* note 49, at 1188; Seidenfeld, *supra* note 50, at 6-12.

[55] *See* BREYER, *supra* note 28, at 42; *see generally* Lakshman Guruswamy, *Integrating Thoughtways: Re-opening of the Environmental Mind?*, 1989 WIS. L. REV. 463, 463-69 *passim* (arguing that environmental statutes tend to focus on one type of pollution problem and ignore the interrelated nature of pollution problems).

[56] *See* Jerry L. Mashaw, *Prodelegation: Why Administrators Should Make Political Decisions*, 1 J.L. ECON. & ORG. 81 (1985) (arguing broad delegation of power to agencies is more efficient than use of overly detailed and restrictive statutory rules).

[57] *See* SUNSTEIN, *supra* note 2, at 108.

[58] *See generally* Jonathan R. Macey, *The Separated Powers and Positive Political Theory: The Tug of War Over Administrative Agencies*, 80 GEO. L.J. 671, 673 (1992) (arguing that Congress can design and structure agency to generate decisions reflecting original understanding of enacting coalition); Matthew D. McCubbins et al., *Structure and Process, Politics and Policy: Administrative Arrangements and Political Control of Agencies*, 75 VA. L. REV.

cisions in *INS v. Chadha*,[59] invalidating a one-House legislative veto, and in *Chevron U.S.A., Inc. v. Natural Resources Defense Council*,[60] emphasizing judicial deference to agency interpretations of statutes, make it more difficult for Congress to use procedural mechanisms to control agencies.[61] Congress has used procedural rules in statutes with only moderate success to control the actions of agencies.[62] Congressional control over the budget and confirmation process, however, gives Congress significant opportunities to influence agencies.[63]

Current congressional attempts to use procedural rules to dictate policy results would unduly restrict agency discretion. The present Congress is considering a number of "regulatory reform" bills that would require agencies to subject proposed rules and perhaps existing rules to analytical and procedural requirements, especially cost-benefit analyses and risk assessments.[64] These bills represent a way for Congress to undertake broad regulatory reforms without going through the burdensome task of amending individual statutes. However, the bills proposed by Republican leaders seem deliberately designed to prevent agen-

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431, at 440-44 (1989) (discussing how legislators can use procedures such as the Administrative Procedure Act to monitor and control agencies).

[59] 462 U.S. 919 (1983).

[60] 467 U.S. 837 (1984); *see generally* Seidenfeld, *supra* note 50.

[61] *See generally* William N. Eskridge, Jr. & John Ferejohn, *The Article I, Section 7 Game*, 80 GEO. L.J. 523 (1992).

[62] *See generally* Seidenfeld, *supra* note 52, at 1524-27 (arguing that it is difficult for Congress to use agency procedures to control agency behavior, especially because legislative coalitions are unstable); *see also* Kathleen Bawn, *Political Control Versus Expertise: Congressional Choices About Administrative Procedures*, 89 AM. POL. SCI. REV. 62, 62-63 *passim* (1995) (arguing that Congress is less likely to use procedures to control agency behavior when technical and political uncertainties are significant).

[63] *See generally* Seidenfeld, *supra* note 50, at 117-18 n.184, 136 (discussing power of Congress to use budget or confirmation process to control agencies); Seidenfeld, *supra* note 52, at 1551-52 (same).

[64] *See generally* NATURAL RESOURCES DEFENSE COUNCIL, BREACH OF FAITH: HOW THE CONTRACT'S FINE PRINT UNDERMINES AMERICA'S ENVIRONMENTAL SUCCESS 3-10 (discussing how proposed H.R. 9's (Job Creation and Wage Enhancement Act of 1995) provisions would impose unnecessary procedural barriers on the ability of agencies to promulgate health regulations and enforce them); John S. Applegate, *A Beginning and Not an End in Itself: The Role of Risk in Environmental Decisionmaking*, 63 U. CIN. L. REV. 1643 (1995). *But see* John D. Graham, *Edging Toward Sanity on Regulatory Risk Reform*, ISSUES IN SCI. & TECH., Summer 1995, at 61-66 (arguing that H.R. 1022 (Risk Assessment and Cost-Benefit Act of 1995) has been unfairly attacked and should become law with some revisions).

cies from issuing any significant regulations by imposing complex analytical requirements. Agencies could not effectively implement such requirements without significantly increasing agency staff and available resources. Such an increase cannot occur in the face of Congressional reduction of agency budgets. These bills are currently stalled in the Senate.[65]

B. *The Presidency Lacks a Long-Term Focus*

Presidents have sought more centralized control over the federal bureaucracy, but have often faced strong congressional resistance.[66] Nevertheless, presidential oversight of agencies has been more systematic and effective than legislative oversight.[67]

Commentators disagree about the desirability of strong presidential control over agency decisionmaking.[68] Because of the President's unique national constituency and ability to act more decisively than a legislature,[69] the Executive Office of the President is a logical place to locate a centralized management structure to coordinate the allocation of resources and consistency of policies among agencies.[70]

On the other hand, White House intervention may undermine the relatively open, public rulemaking process of agencies, allowing special interests with presidential connections to exert undue influence.[71] A President may occasionally exercise control of agencies to advance political interests rather than to improve policy implementation of statutory goals.[72] Agencies are

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[65] *See, e.g.* S. 439, 104th Cong., 1st Sess. (1995); S.291, 104th Cong., 1st Sess. (1995); *See generally* John H. Cushman, Jr., *Democrats Force the G.O.P. to Pull Anti-Regulation Bill*, N.Y. TIMES, July 19, 1995, at A1, A11 (reporting that Senator Dole could not obtain enough votes to pass his proposed regulatory reform bill and will likely have to make changes to secure Democratic votes).

[66] *See* Richard H. Pildes & Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. CHI. L. REV. 1, 8-11 (1995); Shapiro, *supra* note 53, at 16-19 (discussing political and institutional competition between Congress and President to control regulatory agencies).

[67] *See* Shapiro, *supra* note 53, at 7-8.

[68] *See* Rodriguez, *supra* note 49, at 1180-82, 1204-05 (noting that many commentators believe the President must lead regulatory reform efforts); Seidenfeld, *supra* note 50, at 1-2 (citing sources criticizing and favoring presidential oversight of agency policymaking).

[69] *See* Rodriguez, *supra* note 49, at 1193-94.

[70] *See* SUNSTEIN, *supra* note 2, at 107-08; Andrews, *supra* note 97, at 574.

[71] *See* Seidenfeld, *supra* note 50, at 3, 19-25.

[72] *See* Rodriguez, *supra* note 49, at 1199-1200; *see generally* William N. Eskridge, Jr. & John Ferejohn, *Making the Deal Stick: Enforcing the Original Con-*

better suited to conducting anticipatory planning than congressional or presidential institutions because both hazards and relevant knowledge about them evolve more rapidly than can regulatory statutes or the President's priorities.[73]

1. *Why OMB Is Not Up to the Job*

Potentially, the Office of Management and Budget (OMB) can improve coordination of environmental policy because it has a broader view of issues than any single agency.[74] On the other hand, critics have charged that OMB is often biased: OMB's staff consists primarily of economists and budget experts and it has limited technical expertise compared to line agencies such as EPA.[75] As a result, OMB focuses too narrowly on controlling regulatory costs rather than on reducing human health risks or conducting long-term research.[76] OMB argues that it focuses on policy and economics rather than on technical analyses,[77] but a full comprehension of the issues depends on having a solid technical background.[78]

As part of its cost-benefit analysis, OMB has applied present value discounting to future environmental and health benefits.[79]

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stitutional Structure of Lawmaking in the Modern Regulatory State, 8 J. L. ECON. & ORG. 165 (1992); Eskridge & Ferejohn, *supra* note 61.

[73] Andrews, *supra* note 35, at 526-32. Professor Sunstein has proposed creating an entity within the White House with the mission of long-term planning or assigning this goal to OMB. *See* SUNSTEIN, *supra* note 2, at 108.

[74] *See* DANIEL J. FIORINO, MAKING ENVIRONMENTAL POLICY 75 (1995); SUNSTEIN, *supra* note 2, at 108 (proposing creation of function within OMB to resolve conflicts and establish priorities among various policies); Robert A. Katzmann, *Have We Lost the Ability to Govern? The Challenge of Making Public Policy*, 72 OR. L. REV. 231, 240 (1993) (same).

[75] BREYER, *supra* note 28, at 69 (noting that OMB's lack of substantive expertise hampers its ability to review regulations and coordinate regulatory policy); FIORINO, *supra* note 74, at 76 (noting that only about six OMB staff review EPA's rules); Andrews, *supra* note 35, at 575 (arguing that OMB's lack of substantive expertise hampers its ability to review regulations and coordinate regulatory policy).

[76] *See* BREYER, *supra* note 28, at 68-69 (stating that OMB's staff primarily consists of budget analysts and economists and is biased toward cost control rather than reducing risks); Seidenfeld, *supra* note 50, at 16-17 (noting that OMB's staff is biased toward cost control rather than reducing risks).

[77] *See* FIORINO, *supra* note 74, at 76.

[78] *See generally* BREYER, *supra* note 28, at 69 (arguing that OMB's lack of technical expertise handicaps its ability to manage regulatory policy); Shapiro, *supra* note 53, at 24 (arguing that OMB's lack of expertise, its distrust of agencies, and its failure to be selective weaken its effectiveness).

[79] Farber & Hemmersbaugh, *supra* note 1, at 277-79.

Commentators have criticized OMB for using too high a discount rate, although they differ on whether to prohibit discounting altogether or to use an intermediate rate.[80] OMB's original ten percent real rate of discount appears to have been based upon a flawed "hurdle rate" of interest approach,[81] and other implausible assumptions.[82] OMB's new seven percent discount rate is still substantially higher than that used by most analysts.[83]

Some commentators have proposed to improve OMB's role in coordinating environmental policy by increasing its technical staff and by introducing a more comprehensive approach to risk regulation than simple cost-benefit analysis.[84] Others have suggested that OMB can play a beneficial role in eliminating unnecessary regulations and improving the cost-effectiveness of continuing regulations in conjunction with the Office of Science and Technology (OST), which is discussed below.[85] Even with added technical expertise, however, OMB is not the best institution to direct long-term environmental policy because the OMB exists to serve the short-term interests of the President.[86] Espe-

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[80] *See generally* Farber & Hemmersbaugh, *supra* note 1, at 269-70 *passim* (proposing discount rate of one or two percent); Spear, *supra* note 10, at 127-28 (opposing the use of discounting). Even some opponents of present value discounting, however, concede that society may take into account that we are increasingly uncertain about whether an accident will occur in ten years time and that society may discount future deaths if we are less certain that they will actually occur. *See* Spear, *supra* note 10, at 128.

[81] *See* FRANK S. ARNOLD, ECONOMIC ANALYSIS OF ENVIRONMENTAL POLICY AND REGULATION 186-89 (1995) (arguing that hurdle rate approach is incorrect because it reduces to one step what should be a two-step calculation: (1) discount to the present value the future benefits at the consumption rate of interest; and (2) subtract the social costs based upon the shadow price of capital-consumption rate of interest).

[82] OMB appears to have assumed that the cost of public projects would be entirely funded by borrowing rather than by taxes, that there are high real gross-of-tax rates of return on these displaced investments, and that the supply of investment funds is inelastic, so that changes in private-sector investment in response to financing government projects are potentially large. *See id.* at 189.

[83] There has been considerable disagreement about how to measure the consumption rate of interest, depending upon the nature of the assets in the portfolio, but analysts most often use a two or three percent interest rate, although a few, perhaps influenced by OMB's discounting rate, use five to seven percent. *Id.* at 192. Professor Nordhaus in evaluating the problem of global warming used a short-term rate of about six percent, and a longer-term rate of approximately three percent. *See infra* note 336.

[84] *See generally* Pildes & Sunstein, *supra* note 66, at 87, 125-26.

[85] *See* Graham, *supra* note 64, at 63-66 (arguing OMB and OST should work together to allocate resources to the greatest risks).

[86] *See* Andrews, *supra* note 35, at 575.

cially when different parties control the White House and Congress, Congress has reacted to OMB's attempts to micromanage agency policies by enacting rigid statutes designed to eliminate OMB's influence, often at the expense of depriving agencies of necessary discretion.[87] A more politically independent coordinating agency is needed, which is not hostage to changes in presidential administrations, which does not provoke overly rigid congressional statutes, and which has a mission to improve rather than eliminate regulation.

2. *The President's Scientists*

During the 1940s, Vannevar Bush informally served as a presidential science advisor, and since 1951 the President has had an officially designated Science Advisor.[88] The influence of that position has varied greatly in different presidential administrations. OST has achieved its greatest influence by providing technical advice to OMB, but there are political pressures and dangers in that alliance.[89] There are limitations on the independence of the Science Advisor because her influence depends upon a close working relationship with the President, and she must focus on problems that the President regards as immediately important.[90]

The Advisor lacks the staff necessary to oversee regulatory agencies.[91] The failure of OST to participate in reporting raises serious questions about its ability to formulate science policy. The scientific and academic communities that form the natural

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87 *See* Seidenfeld, *supra* note 50, at 18-19.

88 *See generally* EDWARD J. BURGER, JR., SCIENCE AT THE WHITE HOUSE: A POLITICAL LIABILITY 6-11 (1980) (providing history of the Science Advisor); William G. Wells, Jr., *Science Advice from Roosevelt to Ford*, *in* SCIENCE ADVICE TO THE PRESIDENT 253-82 (William T. Golden ed., 1993).

89 *See generally* David Z. Robinson, *Politics in the Science Advising Process*, *in* SCIENCE ADVICE, *supra* note 88, at 223-224 (suggesting that the Science Advisor form alliance with OMB, but observing that Science Advisor's position was abolished by President Nixon in part "because a powerful OMB director did not see the value of independent advice").

90 *See* William A. Blanpied, *The Limitations of White House Science Advice*, in SCIENCE AND TECHNOLOGY ADVICE TO THE PRESIDENT, CONGRESS, AND JUDICIARY 41 (William T. Golden ed., 2d ed. 2d prtg. 1995); *see generally* BURGER, *supra* note 88, at 17-24, 114-24 (discussing political pressures on government science advisors).

91 *See* BREYER, *supra* note 28, at 69 (stating that "[t]he Office of Science Advisor to the President has considerable scientific expertise, but that office, and others like it, lacks size, experience with the administrative detail that accompanies specific program implementation, and direct authority").

constituencies of the Science Advisor are relatively weak politically, and cannot protect OST from presidential political pressures.[92] While the President's science advisors have sometimes played a role in shaping environmental policy,[93] OST has only a few environmental specialists and would have to expand those capabilities if it were to take a larger role in these matters.[94]

3. *Council on Environmental Quality*

NEPA created a Council on Environmental Quality (Council), consisting of three members, including a Chairperson, appointed by the President, and assisted by a staff, within the Executive Office of the President.[95] Throughout the 1970s, under both Republican and Democratic Presidents, the Council played an active role in overseeing agencies and issuing widely distributed annual reports. Most notably, in 1978, the Council promulgated regulations governing how agencies prepare environmental assessments and impact statements under NEPA.[96] The Council's staff grew to about fifty and included substantial expertise in ecology and environmental science as well as economics, policy, and law.[97] The Reagan Administration, however, at the suggestion of OMB Director David Stockman, deliberately destroyed the Council in all but name by firing the overwhelming majority of its professional staff and drastically reducing its

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92 *See* BURGER, *supra* note 88, at xviii.

93 *See generally* BURGER, *supra* note 88, at 73-97 (discussing role of presidential science advisors on environmental policy during the Nixon Administration).

94 *See* Andrews, *supra* note 35, at 531 (noting that the President's Science Advisor has only a few environmental staff members). In January 1993, the total staff of OST totaled 65, including 43 full-time equivalents with the remainder consisting of detailees on short-term assignments from other federal agencies, liaison representatives from other agencies, and various Fellows. *See* D. ALLAN BROMLEY, THE PRESIDENT'S SCIENTISTS: REMINISCENCES OF A WHITE HOUSE SCIENCE ADVISOR 42 (1994). The total budget was $6.25 million. *Id.* at 42.

95 *See generally* 42 U.S.C. § 4342 (1994); Andreen, *supra* note 37, at 215-29 (discussing legislative history of NEPA and creation of the Council).

96 *See generally* Andreen, *supra* note 37, at 230-42 (discussing the Council's role in advising agency on NEPA issues and issuing NEPA regulations); Andrews, *supra* note 35, at 531 n.77, 575-76 (discussing general role of the Council during the 1970s).

97 *See* Andrews, *supra* note 35, at 531 n.77, 575-76 (discussing general role of the Council during the 1970s).

budget.[98] During the Bush Administration, Michael Deland provided professional leadership, but the Council never regained a critical mass of budget and staff expertise.[99] In January 1995, President Clinton merged the Office of Environmental Policy into the Council, appointing the head of that Office as the Chair of the Council and increasing its staff to nineteen full-time members.[100]

The changing fortunes of the Council illustrate how vulnerable White House institutions can be to changes in presidential administration.[101] The support of environmentalists has prevented Presidents from eliminating the Council, but the conflict between serving the outside political interests of environmentalists as well as the internal interests of the White House has weakened the Council's influence.[102] By contrast, EPA has endured policy and budget shifts when presidential administrations have changed, but none so drastic as the Council.[103]

In creating the Council, Congress never intended to give it substantive authority over government agencies or even to serve as a watchdog over them; instead, the Senate Report and subsequent statements by the bill's sponsors suggest that the Council's role was limited to advising the President on the general performance of agencies in addressing environmental issues.[104] EPA occasionally refers disputes between it and other government agencies about the preparation of environmental assessments to the Council, but the Council has merely an advisory role and refuses to entertain referrals which challenge the substantive merits

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98 *See* Andreen, *supra* note 37, at 259 n.361 (noting that the total staff number fell from 49 in 1979 to nine in 1987); Andrews, *supra* note 35, at 576 (noting that the Reagan Administration eliminated the Council's entire professional staff).

99 Andrews, *supra* note 35, at 576.

100 *General Policy: White House Council Seeks to Coordinate Efforts in Reforming Laws, McGinty Says*, 25 Env't Rep. 2196 (March 10, 1995) (after merger with Office of Environmental Policy, the Council has nineteen staff members). President Clinton has reconfigured the Council by appointing a single Chairperson, Kathleen McGinty, and refusing to fill the other two Commissioner positions. *Id.*

101 *See* Andrews, *supra* note 35, at 575-76.

102 *See generally* BURGER, *supra* note 88, at xviii-xix.

103 *See generally* FIORINO, *supra* note 74, at 37-43 (providing summary of EPA's history from 1970 to 1994).

104 *See* Andreen, *supra* note 37, at 254.

of final agency decisions.[105] The overall quality of environmental policymaking might improve if the President or Congress gave the Council greater authority to review and coordinate the decisions of line agencies, but the Council's unstable history raises serious questions about whether White House institutions should have the leading role.

C. *Courts Lack the Necessary Expertise and Jurisdiction*

This Article proposes to refurbish the New Deal model of administrative law, which assumes that courts will normally defer to agencies in matters of substance.[106] Courts and litigation in some cases can improve social policy.[107] In the case of complex environmental regulations, however, judicial review of agency decisionmaking is too often counterproductive because courts simply lack the expertise to question an agency's substantive judgments and there is too much emphasis on procedural formalities. Courts are even less suited to review decisions affecting future generations.

1. *Judicial Deference and Long-Term Planning*

While the basic standards of review in the Administrative Procedure Act (APA) have remained the same,[108] judicial review of agencies' decisions shifted in the 1970s from traditional defer-

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[105] *See* Andreen, *supra* note 37, at 210-12, 253-61 (arguing that the Council or EPA should review the substantive merits of final agency decisions).

[106] *See* Richard B. Stewart, *The Reformation of American Administrative Law*, 88 HARV. L. REV. 1669, 1676-77, 1683-84, 1711-12 (1975) (discussing New Deal or expertise model of administrative law); *see also* Bruce Ackerman & William T. Hassler, CLEAN COAL/DIRTY AIR 4, *passim* (1981) (same); Joel Yellin, *Science, Technology, and Administrative Government: Institutional Designs for Environmental Decisionmaking*, 92 YALE L.J. 1300, 1301 n.3 (1983) (citing sources).

[107] There has been a long debate about the role of the judiciary in effecting social change. *See* Robert A. Katzmann, *Making Sense of Congressional Intent: Statutory Interpretation and Welfare Policy*, 104 YALE L.J. 2345, 2353-54 (1995) (reviewing R. SHEP MELNICK, BETWEEN THE LINES: INTERPRETING WELFARE RIGHTS (1994)) (arguing that Melnick's book provides evidence that courts can influence social policy). *But see* GERALD N. ROSENBERG, THE HOLLOW HOPE: CAN COURTS BRING ABOUT SOCIAL CHANGE? 336-41 (1991) (arguing courts are ineffective at producing social change).

[108] 5 U.S.C. 702 (1994). Courts normally focus on whether informal agency action such as rulemaking was "arbitrary, capricious, an abuse of discretion," APA, 5 U.S.C. § 706(2)(A) (1994), or whether in an individual adjudication, there was substantial evidence for the agency's decision. 5 U.S.C. § 706(2)(E) (1994); *see* BREYER, *supra* note 28, at 57.

ence towards regulatory decisions to a hard look at a reviewable record, requiring far more extensive documentation of the merits of the decision than merely a reasonable judgment on the part of the administrator.[109] There are a number of arguments in favor of more stringent judicial review, including the need to force administrators to explain their reasoning to the public, to prevent regulated industries from "capturing" the regulating agency, to facilitate public participation in the administrative process, and to force agency compliance with congressional mandates.[110]

Judicial review, however, frequently is a serious impediment to an agency that seeks to engage in long-term planning and priority-setting.[111] Judicial decisions often lead to unintended consequences,[112] such as lengthy delays,[113] distortion of agency agendas by forcing low-risk issues to the front of the regulatory queue,[114] or the adoption by agencies of time-consuming proce-

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[109] Andrews, *supra* note 35, at 545; *see generally* Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402 (1971) (holding that a court must review "whole record" compiled by agency and that agency must explain its reasons for a decision based upon factors in the record rather than by *post hoc* rationalizations in affidavits).

[110] *See* John S. Applegate, *Worst Things First: Risk, Information, and Regulatory Control Structure in Toxic Substances Control*, 9 YALE J. ON REG. 277, 289 (1992) (searching judicial review may have some place in reviewing agency compliance with congressional mandates); McNollgast, *Legislative Intent: The Use of Positive Political Theory in Statutory Interpretations*, 57 LAW & CONTEMP. PROBS. (Winter and Spring 1994); McNollgast, *Positive Canons: The Role of Legislative Bargains in Statutory Interpretation*, 80 GEO. L.J. 705, 737 (1992).

[111] Andrews, *supra* note 35, at 545-46.

[112] BREYER, *supra* note 28, at 58 (offering as an example the use of alternative procedures, such as a product recall, in lieu of agency rulemaking). "Aggressive judicial attention to the establishment of threshold levels of risk, to the certainty with which they are established, and to the reliability of the agency's scientific case, can impose a burden of proof" that is extremely difficult and expensive or impossible to meet. Applegate, *supra* note 110, at 297. A court's requirement that regulators should consider "alternatives" to a total regulatory ban may result in unproductive delays. BREYER, *supra* note 28, at 58; *see also* Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1217 (5th Cir. 1991) (overturning EPA's rule banning asbestos brake linings because agency did not consider alternatives).

[113] *See* BREYER, *supra* note 28, at 58. Such remands or agency procedures engendered by the threat of such review often lead to delays in the approval of products that would be safer than those on the market. *See generally* Peter Huber, *Safety and the Second Best: The Hazards of Public Risk Management in the Courts*, 85 COLUM. L. REV. 277, 307-14 (1985). Many judges recognize that a decision to set aside an agency rule often creates a number of difficulties and delays, and, therefore, hesitate to overrule an agency's decision. BREYER, *supra* note 28, at 57-58.

[114] BREYER, *supra* note 28, at 57; Applegate, *supra* note 110, at 297.

dures.[115] As a consequence, rules often become frozen in place and cannot adapt to changing scientific knowledge.[116] In theory, judicial opinions could serve as a "second opinion" or check on questionable agency decisionmaking, but because courts tend to concentrate on procedural issues and defer to an agency's scientific expertise, the adversarial process often does not adequately address or improve the scientific underpinnings of administrative decisions.[117] Accordingly, many proponents of technocratic decisionmaking have argued that courts should not intrude into agency judgments about difficult scientific questions, or impose burdensome procedural and documentation requirements.[118]

During the last fifteen years, the Supreme Court has generally sought to rein in overly aggressive judicial review by lower courts, but sometimes the Court has applied the "hard look" standard to reverse an agency that, for example, failed to explain a change in policy.[119] The Court has been especially sensitive to

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115 BREYER, *supra* note 28, at 49.

116 BREYER, *supra* note 28, at 49; John S. Applegate, *How to Save the National Priorities List from the D.C. Circuit and Itself*, 9 J. NAT. RESOURCES & ENVTL. L. 211, 220-22, 231 (1993-94); Thomas O. McGarity, *Some Thoughts on "Deossifying" the Rulemaking Process*, 41 DUKE L.J. 1385, 1392 (1992).

117 *See generally* Gulf South Insulation v. Consumer Prod. Safety Comm'n, 701 F.2d 1137, 1140, 1146 (5th Cir. 1983) (rejecting Occupational Safety and Health Administration standard because it was not based on what in the *court's* view constituted "good science"); Kenneth S. Abraham & Richard A. Merrill, *Scientific Uncertainty in the Courts*, ISSUES IN SCI. & TECH., Winter 1986, at 93, 97-99 (criticizing *Gulf South*); Howard A. Latin, *The "Significance" of Toxic Health Risks: An Essay in Legal Decisionmaking Under Uncertainty*, 10 ECOLOGY L.Q. 339, 344-49 (1982) (criticizing Court for agreeing with qualitative findings of benzene risk, but confounding lack of quantitative data with inability to provide such data); Joel Yellin, *High Technology and the Courts: Nuclear Power and the Need for Institutional Reform*, 94 HARV. L. REV. 489, 497-500, 549 (1981) (arguing there is need for "second opinions" in environmental decisionmaking and suggesting courts have failed to provide such opinions).

118 *See* JOHN D. GRAHAM ET AL., IN SEARCH OF SAFETY: CHEMICALS AND CANCER RISK 215 (1988); Abraham & Merrill, *supra* note 117, at 106; Applegate, *supra* note 110, at 297.

119 In *Chevron U.S.A., Inc. v. NRDC*, the Supreme Court held that "considerable weight should be accorded to an executive department's construction of a statutory scheme it is entrusted to administer." 467 U.S. 837, 844. It further stated that "an agency to which Congress has delegated policymaking responsibilities may, within the limits of that delegation, properly rely upon the incumbent administration's views of wise policy to inform its judgments." *Id.* at 865. However, in *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43, 53-56 (1983), the Court sent conflicting messages about the appropriate level of review: first, warning that "[t]he scope of review ... is narrow and a court is not to substitute its judgment for that of the agency;" and second, the majority seemingly engaged in aggressive substantive review of the agency

agency decisions involving difficult technical questions at the "frontiers of science." In 1983, the Supreme Court in *Baltimore Gas & Electric. Co. v. Natural Resources Defense Council*[120] *(Vermont Yankee IV)* held that the Nuclear Regulatory Commission's decision that nuclear power plant licensing boards should assume, for the purposes of NEPA, that the permanent storage of nuclear wastes would have no significant impact, and thus should not affect the decision whether to license a particular nuclear power plant, was within the bounds of reasoned decisionmaking required by the APA.[121] The Supreme Court declared that "a reviewing court must remember that the Commission is making predictions, within its area of special expertise, at the frontiers of science. When examining this kind of scientific determination, as opposed to simple findings of fact, a reviewing court must generally be at its most deferential."[122]

The author agrees with the Court's deferential approach to predictions at the frontiers of science. Courts are not institutionally well-suited to make long-term predictions or to readjust agency priorities.[123] On the other hand, it would have been wise

finding that passive seat belts would be ineffective. *See also* Sidney A. Shapiro & Richard E. Levy, *Judicial Incentives and Indeterminacy in Substantive Review of Administrative Decisions*, 44 DUKE L.J. 1051, 1066 (1995) (discussing mixed messages in *State Farm*).

120 462 U.S. 87, 105-06 (1983)(*Vermont Yankee*)(8-0 decision). Justice Powell took no part in the consideration or hearing of the case. *Id.* at 108.

121 The *Vermont Yankee* decision generated considerable controversy. *See generally* Stephen Breyer, Vermont Yankee *and the Courts' Role in the Nuclear Energy Controversy*, 91 HARV. L. REV. 1833 (1978) (criticizing "hard look" judicial review for intruding too deeply upon the administrative process and arguing that the Supreme Court, in 1978, should not have remanded *Vermont Yankee* for further factual findings). *But see* Andrew D. Siegel, *The Aftermath of* Baltimore Gas & Electric Co. v. NRDC*: A Broader Notion of Judicial Deference to Agency Expertise*, 11 HARV. ENVTL. L. REV. 331, 378-80 (1987) (arguing that *Vermont Yankee* be limited to its facts because: (1) Justice O'Connor did not support her broad statement of deference with adequate precedent or reasoning; and (2) courts must provide meaningful check on exercise of agency expertise).

122 *Vermont Yankee*, 462 U.S. at 103. Under *Vermont Yankee*, courts reviewing agency findings at the frontiers of science are apparently even more deferential than when they apply the deferential *Chevron* standard to agency interpretations of ambiguous statutes.

123 Choosing which environmental problems to address over a long period involves a classic "polycentric" problem in which a decisionmaker must choose among many competing concerns, and a decision as to one may affect all others, but "reasoned adjudication, on the other hand, requires that the decisionmaker's choices be narrowed to a bipolar standard or established succession of bipolar standards to which the tribunal can apply the facts it finds";

to have a second opinion about the substantive merits of the Nuclear Regulatory Commission's findings because of serious questions regarding the Commission's lack of objectivity about the industry it regulated.[124]

Some commentators have suggested that courts can improve the political process by reviewing administrative agency decisions to prevent egregious interest group influence.[125] Such proposals, however, raise serious questions about giving judges too much authority to impose their own substantive values.[126] In addition, the judicial process is not necessarily better equipped than the legislature to rein in powerful interest groups, who often have more resources to conduct litigation and can even influence judicial appointments.[127]

Finally, the greater political insulation of federal judges is not always desirable.[128] While Congress is often overly responsive to interest group political pressures, federal judges, who normally serve for life, are frequently overly insulated from popular values.[129] Article III federal judges are hardly representative of American society in terms of education, professional achieve-

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Applegate, *supra* note 110, at 338 (summarizing Lon Fuller's theory of adjudication); James A. Henderson, Jr., *Expanding the Negligence Concept*, 51 IND. L.J. 467-77, 497-98 (1976) (planning problems generally, and environmental planning in particular, are polycentric); BREYER, *supra* note 28, at 57 (arguing that courts normally lack the power to require agencies to create systematically rational agendas and are less able than Congress to set priorities for the future); Huber, *supra* note 113, at 331-32 (stating that public agencies are capable of addressing both sides of public risk choices—risks incurred and risks averted—but courts are not).

124 *See, e.g.*, Yellin, *supra* note 117, at 498-99, 531-49, 554 *passim* (arguing that Atomic Energy Commission and its successor, Nuclear Regulatory Commission, failed to deal with reactor safety and that its decisions should have been reviewed by a skeptical but informed constituency).

125 *See* Einer R. Elhauge, *Does Interest Group Theory Justify More Intrusive Judicial Review?*, 101 YALE L.J. 31, 33 (1991) (citing sources); *See, e.g.*, Jonathan R. Macey, *Promoting Public-Regarding Legislation Through Statutory Interpretation: An Interest Group Model*, 86 COLUM. L. REV. 223, 263-64 (1986) (arguing for a judicial role in reviewing agency decisions to prevent interest group domination).

126 *See* Elhauge, *supra* note 125, at 60-61

127 *See* Elhauge, *supra* note 125, at 80-83. Professor Elhauge, however, acknowledges that interest groups cannot necessarily predict all the issues that will arise during a federal judge's lifetime tenure and that factor makes interest group influence over the judiciary less certain. Elhauge, *supra* note 125, at 82-83.

128 *See* Elhauge, *supra* note 125, at 83-87.

129 *See* Seidenfeld, *supra* note 52, at 1542.

ment, or income and until recently were rarely women or minorities.[130] In addition, since the 1970s, federal judges have refused to issue advisory opinions for the President or Congress.[131] The federal courts have probably gained greater independence from the political branches because of their unwillingness to issue advisory opinions, but at the expense of participating in democratic deliberation.[132]

While courts should not allow agencies to flout clear statutory dictates or established procedures, the judiciary should recognize that agencies may consider political factors and democratic debate when adjusting a statute to changing circumstances. Professor Strauss has argued that the Supreme Court's decision in *Citizens to Protect Overton Park v. Volpe*,[133] which held that the Secretary of Transportation had failed to consider statutory commands discouraging the building of highways through public parks, ignored the Secretary's careful consideration of both national and local political factors.[134] Similarly, the Supreme Court's *State Farm* decision, which held that the Secretary of Transportation had failed to explain sufficiently his reasons for rescinding the passive restraint requirement issued by the National Highway Traffic Safety Administration,[135] arguably did not consider whether political forces and democratic dialogue could constrain presidential ambitions.[136] In some cases, courts

130 *See* CHRISTOPHER B. EDLEY, JR., ADMINISTRATIVE LAW 248-49 (1990); Seidenfeld, *supra* note 52, at 1542. Many states have attempted to lessen the isolation of judges by adopting judicial elections, based on the assumption that in a democratic society judges should reflect or be "common" enough to have the interests of the people at heart. Seidenfeld, *supra*, note 52, at 1542.

131 Some state courts allow advisory opinions, but these courts "often maintain the notion that, in so doing, they are performing an extrajudicial function, and that such opinions should consequently have dramatically limited *stare decisis* effect." LAURENCE H. TRIBE, AMERICAN CONSTITUTIONAL LAW 73 n.4 (1988) (listing Colorado, Florida, Massachusetts, Maine, New Hampshire, Rhode Island, and South Dakota as authorizing judicial advisory opinions).

132 *See generally* Seidenfeld, *supra* note 52, at 1543-44 (discussing judiciary's inability to implement civic republican theory because of such things as its reactive nature). It is true that federal judges often advise Congress about the need for new legislation or revising an existing law. *See* Deanell R. Tacha, *Judges and Legislators: Renewing the Relationship*, 52 OHIO ST. L.J. 279, 283 (1991).

133 401 U.S. 402 (1971).

134 *See generally* Peter L. Strauss, *Revisiting* Overton Park: *Political and Judicial Controls Over Administrative Actions Affecting the Community*, 39 UCLA L. REV. 1251 (1992).

135 463 U.S. 29, 52 (1983).

136 *See generally* JERRY L. MASHAW & DAVID L. HARFST, THE STRUGGLE FOR AUTO SAFETY (1990).

applying the second step of *Chevron* might force an agency to provide a more meaningful explanation of why its interpretation or policies are consistent with a statute.[137] Nevertheless, courts should generally defer to agency interpretations of statutes and allow Congress or the President to use political or budgetary power to change policies that fail to fulfill statutory purposes.[138]

2. *Would Science Courts Be Better?*

Some commentators have proposed the creation of specialized environmental or "science courts," institutions specifically designed to deal with factual technical issues.[139] Similar proposals for specialized courts have also failed because of a traditional preference for generalist judges.[140]

The primary premise for having a "Science Court" is that scientific facts or issues, separate from moral, legal, or policy issues, demand resolution by scientific experts.[141] The proposal for a Science Court has been criticized on the ground that it is impossible to separate technical from legal, normative, and political issues.[142] There is a "large gray area between pure science and pure policy" that cannot be addressed purely by a scientific analysis because of scientific uncertainty or the presence of economic

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137 *See* Seidenfeld, *supra* note 50, at 129.

138 *See generally* Seidenfeld, *supra* note 50, at 117-18 n.184, 136 (discussing ability of Congress to use budget or confirmation process to control agencies); Seidenfeld, *supra* note 52, at 1551-52 (same).

139 *See, e.g.,* Arthur Kantrowitz, *Controlling Technology Democratically*, 63 AM. SCIENTIST 505 (1975) (proposing science court); Yellin, *supra* note 106, at 1307 n.35 (citing numerous commentators).

140 The implication is that specialized knowledge necessarily breeds elitists and that generalists are more likely to have a broad sense of the public welfare. *See* EDLEY, *supra* note 130, at 248. *See also* Abraham D. Sofaer, *The Science Court: Unscientific and Unsound,* 9 ENVTL. L. 1, 2 (1978); Harold Bruff, *Specialized Courts in Administrative Law*, 43 ADMIN. L. REV. 329 (1991) (discussing Article I legislative courts, Article II executive adjudicators, and Article III judges with specialized dockets). Only in the areas of taxation and patents has Congress created specialized courts, the tax court and Federal Circuit respectively, and even in these areas there was some opposition. *See* Simon Rifkind, *A Special Court for Patent Litigation? The Danger of a Specialized Judiciary*, 37 A.B.A. J. 425 (1951).

141 *See* Sofaer, *supra* note 140, at 5-6 (explaining premises underlying proposal for Science Court and especially belief that scientific issues can be separated from legal, policy, or moral questions); Yellin, *supra* note 106, at 1305-08.

142 *See generally* Stephen L. Carter, *Separatism and Skepticism*, 92 YALE L.J. 1334, 1334-41 (1983); Sofaer, *supra* note 140, at 5-6, 10-12, 25; Yellin, *supra* note 106, at 1309-17.

or social factors.[143] If important environmental issues involve a mixture of technical, policy, normative, and legal issues, then generalist courts or political institutions may remain the best reviewing mechanism.[144] Some commentators who oppose a Science Court have proposed other ways to improve scientific factfinding by courts.[145]

Although judges with specialized knowledge or experience have advantages compared to generalist judges, the very nature of the judicial process limits the ability of judges to engage in a deliberative dialogue with agency staff and interest groups.[146] In addition, there is the danger that a specialized court might be biased, especially in favor of the government.[147] Furthermore, judicial review by a Science Court may lead to procedural ossification because an agency seeking to create a paper record may devote excessive resources in order to compile a record.[148]

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143 *See* William Allen, Note, *The Current Federal Regulatory Framework for Release of Genetically Altered Organisms Into the Environment*, 42 FLA. L. REV. 531, 537-38 (1990).

144 *See generally* Yellin, *supra* note 106, at 1325-33.

145 Such other methods of improvement include: the creation of a scientific advisory body associated with the federal appellate courts; the use of special masters; the greater use of court appointed expert witnesses; and the hiring of judicial clerks with a scientific background. *See* Carter, *supra* note 142, at 1339 (suggesting use of special scientific advisory panels, scientific aides for bureaucrats, and science clerks for judges); Sofaer, *supra* note 140, at 25-26 (proposing special scientific advisory panels within existing agencies); Yellin, *supra* note 106, at 1330 (discussing creation of a science advisory body for the federal judiciary and use of special masters); Yellin, *supra* note 117, at 555-60 (same).

146 *See generally* Seidenfeld, *supra* note 52, at 1557 (discussing staff involvement in judicial decisionmaking).

147 There has been considerable debate about whether the Tax Court is biased in favor of the government. *Compare* Deborah A. Geier, *The Tax Court, Article III, and the Proposal Advanced by the Federal Courts Study Committee: A Study in Applied Constitutional Theory*, 76 CORNELL L. REV. 985, 998-99 (1991) (using statistical evidence to argue tax court is biased in favor of government) *with* Paul L. Caron, *Tax Myopia, or Mamas Don't Let Your Babies Grow Up to Be Tax Lawyers*, 13 VA. TAX REV. 517, 579 (1994) (arguing that Geier's evidence does not take into account data in the Annual Report of the Commissioner of Internal Revenue that shows taxpayers' overall savings as a percentage of amounts at issue in the tax court were approximately one-half higher than in the district court and the Court of Federal Claims); David Laro, *The Evolution of the Tax Court as an Independent Tribunal*, 1995 U. ILL. L. REV. 17, 24-28 (arguing that tax court is not biased and that statistical analysis cannot adequately compare tax court and other federal courts because tax court attracts a different composition of cases).

148 *See supra* note 117 and accompanying text (discussing problem of procedural ossification).

IV
THE CAPABILITY OF AGENCIES TO PROTECT FUTURE GENERATIONS

In theory, the internal structure of government agencies and the professional or technical staff "encourages deliberative decisionmaking aimed at furthering public rather than private values."[149] Thus, agencies should have a comparative institutional advantage in addressing long-term environmental issues compared to Congress, the White House, or courts. In practice, however, the major health and environmental regulatory agencies lack effective planning and priority-setting capabilities, especially for long-term issues.[150] Because of the limited or nonexistent statutory authority for conducting comprehensive planning, agencies have tended to take a relatively narrow view of planning and the overall role of their regulatory processes.[151] Finally, there is inadequate coordination among agencies.

A. *Improving Long-Range Planning*

1. *The Need for Long-Term Planning*

Some commentators believe that our expansive regulatory system is unnecessary, and they provide examples involving market incentives and self-regulation.[152] While eliminating regulations and relying upon market incentives may be appropriate in some circumstances, deregulation efforts do not address the failure of agencies to devote more resources to festering problems nor to research currently unexamined risks in a more systematic fashion.[153]

Anticipatory planning by regulatory agencies is necessary because scientific knowledge about environmental and health hazards changes more rapidly than the broad institutions of general purpose governance can attend to them.[154] For instance, many environmental problems have been recognized as more

149 *See* Seidenfeld, *supra* note 52, at 1554-55.

150 Only in recent years have agencies begun to introduce limited procedures for planning and setting systematic priorities among their diverse mandates. Andrews, *supra* note 35, at 520-22.

151 *See* Andrews, *supra* note 35, at 522-23.

152 *See* Gouvin, *supra* note 7, at 489-90.

153 BREYER, *supra* note 28, at 56.

154 "Planning" includes two equally important components: (1) anticipatory planning involves the recognition of important problems at the first possible opportunity, perhaps even before their emergence; and (2) regulatory planning,

dangerous than was initially believed, including lead, indoor pollution, radon, and the effects of chlorofluorocarbons on the ozone layer and of combustion on global warming.[155] On the other hand, scientific research has shown that asbestos and certain carcinogens are not such serious threats as scientists initially believed.[156]

While the inherent uncertainties of science make it difficult for anyone to determine the greatest environmental threats, "[t]he press of agency business presents the primary obstacle to effective anticipatory research . . . Statutes that impose short-term deadlines consume an agency's scarce resources, leaving little room for anticipatory research."[157] In addition, either institutional barriers within an agency, such as established research programs, or external political pressures may prevent an agency from performing new research or using new information.[158]

In order to respond to new priorities, agencies need the "authority to use a broad range of policy interventions."[159] Increasing agency independence may create a greater incentive for the agency to acquire technical knowledge upon which it will base its decisions.[160] One solution is to delegate to agencies broad authority "to protect human health and the environment from whatever hazards are most severe, not merely to regulate particular programs specified by statutes."[161]

2. *Evaluating EPA's Current Planning*

EPA and other federal agencies have engaged in some long-range environmental planning.[162] However, such planning is inhibited by: (1) the lack of an integrated, multimedia approach to pollution reduction in most statutes; (2) statutory deadlines in existing programs and short-term political pressures; (3) inadequate

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which involves allocating agency resources to active regulatory programs. Andrews, *supra* note 35, at 517.

155 Andrews, *supra* note 35, at 527 n.53 (citing sources).

156 Andrews, *supra* note 35, at 527 n.54 (citing sources).

157 Andrews, *supra* note 35, at 534.

158 Andrews, *supra* note 35, at 534-35 (citing sources). EPA will have to reorganize its research budget and develop better anticipatory research capacities.

159 Andrews, *supra* note 35, at 533.

160 Bawn, *supra* note 62, at 66.

161 Andrews, *supra* note 35, at 532.

162 *See generally* Andrews, *supra* note 35, at 538-72 (discussing planning in EPA, Food and Drug Administration, Occupational Safety and Health Administration, and Consumer Product Safety Commission).

and uncertain funding for anticipatory research and strategic planning; and (4) the predilections of the current EPA Administrator in determining funding for long-term planning.[163]

"EPA's research mission has remained closely linked to the operating mandates and priorities of its established regulatory programs."[164] The overwhelming majority of EPA's current research money is targeted for high-visibility issues such as acid rain and immediate priorities rather than longer-range anticipatory research.[165] This limited focus has been exacerbated by serious budget limitations that make it difficult for the agency to address every statutory mandate.[166]

EPA's Office of Research and Development "has been dominated since its inception by the demand to produce information to justify and defend immediate regulatory actions."[167] Recognizing that the Office of Research and Development has little time for long-range anticipatory research or planning, EPA has made a number of attempts to create long-term research units, but budget cuts, an emphasis on short-term priorities, and internal agency politics have resulted in the elimination of a number of promising efforts.[168]

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163 Andrews, *supra* note 35, at 556.

164 Andrews, *supra* note 35, at 551.

165 Andrews, *supra* note 35, at 552.

166 During the early 1980s, the Reagan administration reduced EPA's research and development budget from $360 million to $250 million in the course of two years and virtually eliminated long-range and anticipatory research. Andrews, *supra* note 97, at 551. In nominal dollars, EPA's research budget has gradually risen once again, but, in real dollars, the budget declined by about eleven percent between 1980 and 1992. CARNEGIE COMM'N ON SCIENCE, TECHNOLOGY, AND GOV'T, ENVIRONMENTAL RESEARCH AND DEVELOPMENT: STRENGTHENING THE FEDERAL INFRASTRUCTURE, 40 (1992); Andrews, *supra* note 35, at 551-52; *see also* Bradford C. Mank, *Superfund Contractors and Agency Capture*, 2 N.Y.U. ENVTL. L.J. 34, 43 (1993) (stating that EPA's total budget was stagnant in real terms between 1980 and 1992 despite an overall increase in the agency's workload); Seidenfeld, *supra* note 50, at 8 n.42 (arguing that chronic underfunding of EPA prevents agency from fulfilling statutory mandates).

167 Andrews, *supra* note 35, at 548-49.

168 *See* Andrews, *supra* note 35, 549-52 (discussing EPA's creation and then abandonment of the Washington Environmental Research Center and the Office of Strategic Assessments and Special Studies). EPA still retains a modest Office of Exploratory Research, which provides relatively minor funding for competitive research grants and academic centers, but more needs to be done to foster anticipatory research. Andrews, *supra* note 35, at 550-51. The Clinton EPA established a new Science to Achieve Results (STAR) program, which seeks to divide research funding evenly between immediate problems and long-

3. *Comparative Risk Assessment*

Since 1987, EPA has studied the possibilities of using relative risk as a primary criterion for setting priorities[169] During the Bush administration, EPA Administrator William Reilly made comparative risk assessment and its implementation a personal priority.[170] During the Clinton Administration, a National Performance Review Office headed by Vice President Gore issued a report that endorsed risk prioritization, and called for greater emphasis on identifying future risks and avoiding them.[171] How successfully the Clinton Administration will implement long-range planning remains to be seen.

Agencies are too often limited in their ability to readjust either priorities or remedies because of narrow statutory commands.[172] Some commentators and environmental groups have recommended transforming EPA into a cabinet-level Department of the Environment and adopting a single, comprehensive environmental protection statute within which priorities could be

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term efforts, but the program faces an uncertain future in light of the 104th Congress' desire to cut the agency's budget. *See $7.4 Billion Request from Agency Gets Cool Reception From Senate Panel*, 26 Env't Rep. (BNA) 217 (May 19, 1995).

169 *See* EPA SCIENCE ADVISORY BOARD, REDUCING RISK: SETTING PRIORITIES AND STRATEGIES FOR ENVIRONMENTAL PROTECTION 2, 16 (1990); EPA, COMPARING RISKS AND SETTING ENVIRONMENTAL PRIORITIES: OVERVIEW OF THREE REGIONAL PROJECTS (1989); EPA, UNFINISHED BUSINESS: A COMPARATIVE ASSESSMENT OF ENVIRONMENTAL PROBLEMS (1987). These developments are described and critically reviewed in Andrews, *supra* note 35, at 553; Donald T. Hornstein, *Reclaiming Environmental Law: A Normative Critique of Comparative Risk Analysis*, 92 COLUM. L. REV. 562, 563-69 (1992); Symposium, *Risk Analysis and the United States Environmental Protection Agency*, 21 ENVTL. L. 1321-1424 (1991); Symposium, *Risk Assessment in the Federal Government*, 3 N.Y.U. ENVTL. L.J. 251-558 (1995).

170 *See e.g.*, William K. Reilly, *Taking Aim Toward 2000: Rethinking the Nation's Environmental Agenda*, 21 ENVTL. L. 1359 (1991); William K. Reilly, *The Turning Point: An Environmental Vision for the 1990s*, 20 ENV'T REP. (BNA) 1386 (Dec. 8, 1989); Andrews, *supra* note 35, at 554-55; Applegate, *supra* note 110, at 279.

171 *See* OFFICE OF THE VICE PRESIDENT, ACCOMPANYING REPORT OF THE NATIONAL PERFORMANCE REVIEW: IMPROVING REGULATORY SYSTEMS 53-63 (1993); Jeffrey S. Lubbers, *Better Regulations: The National Performance Review's Regulatory Reform Recommendations*, 43 DUKE L.J. 1165, 1174-76 (1994) (discussing National Performance Review's recommendations for ranking risks and engaging in anticipatory planning).

172 For example, EPA has only limited power to regulate indoor air pollution even though the agency believes that such pollution poses a higher health risk than many other hazards it regulates. Andrews, *supra* note 35, at 533 n.85.

set with greater discretion.[173] However, these proposals have stalled in Congress, in part because of conservative efforts to require that all regulations be justified on the basis of scientific risk assessment.[174] There is a danger that Congress will adopt symbolic legislation elevating EPA to cabinet-level status without giving the agency enough authority or resources to carry out comparative risk assessment or long-term planning.[175]

B. *Planning Among the Agencies*

The responsibilities of the various regulatory agencies often intersect or overlap because they regulate many of the same substances and therefore require similar scientific and technical information.[176] In addition, different agencies often regulate many of the same firms and industrial processes with requirements that may or may not harmonize or conflict.[177] Furthermore, different

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[173] *See* NATIONAL COMM'N ON THE ENV'T, CHOOSING A SUSTAINABLE FUTURE 47-51 (1993) (endorsing proposal for Department of Environment with general statute); CONSERVATION FOUNDATION, THE ENVIRONMENTAL PROTECTION ACT (SECOND DRAFT 1988) (same); Andrews, *supra* note 97, at 524-25 (discussing Applegate and National Commission on the Environment); Applegate, *supra* note 110, at 280, 349-52 (discussing Conservation Foundation proposal for cabinet-level Department of Environment and single, comprehensive environmental protection statute, and arguing proposal would provide suitable framework within which to set priorities).

[174] Before 1995, Congress considered bills that would have created a cabinet-level Department of the Environment, but House Democratic leaders in 1994 withdrew such a bill when it became clear that it could not be passed without support from conservatives who demanded amendments requiring the proposed Department to conduct risk assessments and cost-benefit analyses before issuing regulations. *See, e.g.*, H.R. 3425, 103rd Cong., 2d Sess. (1994); S. 171, 103d Cong., 1st Sess. (1993); Applegate, *supra* note 110, at 280, 351-52 & n.424 (citing proposed legislation to create cabinet-level Department of Environment); *Future of EPA Cabinet Bill Uncertain Following House Vote on Amendment Rule*, 24 Env't Rep. (BNA) 1719 (Feb. 4, 1994) (noting that House leaders withdrew H.R. 3425 when it became clear that the bill could not win approval without accepting conservative amendments requiring risk assessment and cost-benefit analysis); *EPA Cabinet Status*, 24 Env't Rep. (BNA) 1660 (Jan. 21, 1994) (discussing conservative efforts to add risk assessment and cost-benefit analysis requirement amendments to bills proposing cabinet-level Department of Environment). The Republican-dominated 104th Congress is focusing on these conservative regulatory reforms and appears to be uninterested in elevating the status of EPA.

[175] *See* Andrews, *supra* note 35, at 579-80.

[176] GARY C. BRYNER, BUREAUCRATIC DISCRETION: LAW AND POLICY IN FEDERAL REGULATORY AGENCIES 207 (1987); Andrews, *supra* note 35, at 572.

[177] *See* BRYNER, *supra* note 176, at 207; Andrews, *supra* note 35, at 572.

agencies study the same trends and events that affect their priorities over time.[178]

Overlapping jurisdiction between different agencies often causes serious problems. For example, different agencies or even different departments within the same agency have sometimes applied different standards for measuring the harmfulness of the same substance or conduct.[179]

There are two major ways to improve coordination among agencies: (1) through management by the Executive Office of the President; or (2) through direct coordination among independent regulatory agencies.[180] During the Carter Administration, the heads of all major health, safety, and environmental regulatory agencies created an informal organization, the Interagency Regulatory Liaison Group, chaired by EPA Administrator Douglas Costle, to coordinate regulatory initiatives and improve shared analytical methods and assumptions.[181] President Reagan, however, discontinued the Group because interagency regulatory agenda-setting was at odds with his emphasis on centralized control by OMB and his broader philosophy of deregulation.[182] Vice President Gore's National Performance Review has proposed to revive the Interagency Regulatory Coordinating Group.[183] In Executive Order No. 12,881, President Clinton established a National Science and Technology Council chaired by himself with the express goal of coordinating the scientific and technology policymaking process in the federal government submitting recommendations to the Director of

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178 *See* Andrews, *supra* note 35, at 572.

179 For example, EPA sets pesticide tolerance levels for residues in foods under the Federal Food, Drug and Cosmetics Act of 1938 administered by the Food and Drug Administration (FDA), but until recently the two agencies had different standards for what is an acceptable risk and for calculating how many lives will be saved by their regulations. *See* BREYER, *supra* note 28, at 21 (noting five-fold discrepancy between EPA and FDA methods for calculating how many cancer deaths EPA regulations would prevent); Andrews, *supra* note 97, at 573 (noting that EPA and FDA have different standards for acceptable risk).

180 Andrews, *supra* note 35, at 572.

181 *See* MARK K. LANDY ET AL., THE ENVIRONMENTAL PROTECTION AGENCY: ASKING THE WRONG QUESTIONS 172-203 (1990) (providing a detailed history of Interagency Regulatory Liaison Group); Andrews, *supra* note 35, at 572-73.

182 *See* LANDY, *supra* note 181, at 172-203; Andrews, *supra* note 35, at 572-73.

183 *See* OFFICE OF THE VICE PRESIDENT, *supra* note 171, at 18-19; Lubbers, *supra* note 171, at 1170.

OMB.[184] In addition, President Clinton's Executive Order No. 12,866 authorizes the establishment of "Regulatory Working Groups," which will coordinate the development of regulatory tools and common policies among agencies that have similar responsibilities and missions.[185] While these Clinton initiatives hold promise for improving interagency coordination functions, these proposals are "only moderately ambitious;"[186] these orders do not establish strong institutions that are likely to survive a Republican Presidency.

V
CAN WE CREATE BETTER AGENCIES?

The current ineffectiveness of agencies at addressing long-term environmental problems raises broader questions about how to improve their ability to tackle complex social issues. In order to address long-term problems, agencies need more resources and greater freedom from short-term political pressures. Better science alone is not enough. In practice, both politics and science influence policy, but rarely is there meaningful dialogue between their different perspectives.[187]

A. *Are Agencies Capable of Reforming Themselves?*

Some commentators argue that agencies are usually incapable of reforming themselves because individual administrators often do not serve long enough to effect change; changes in presidential administrations frequently lead to policy shifts that undermine innovations implemented by the previous administration.[188] Further, the internal dynamics of bureaucracies also

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[184] Its membership includes several cabinet secretaries and high-level White House staff, the heads of various safety and environmental agencies, the Vice President, and the Assistant to the President for Science and Technology. Exec. Order No. 12,881, 58 Fed. Reg. 62,491 (1993). The Clinton Administration has also made some efforts toward informal consultation at a monthly "breakfast club" by the Secretaries or Administrators of EPA, Agriculture, Energy, and Interior. Andrews, *supra* note 35, at 573.

[185] *See* Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (1993); Lubbers, *supra* note 171, at 1170 (noting that National Performance Review recommended Regulatory Working Group and President Clinton adopted proposal); Shapiro, *supra* note 53, at 39.

[186] *See* Rodriguez, *supra* note 49, at 1202-04.

[187] *See* Heinzerling, *supra* note 28, at 472-73.

[188] *See* Rodriguez, *supra* note 49, at 1189-90.

make it difficult to change administrative behavior.[189] Congress often interferes with the ability of agencies to implement statutes or to improve regulatory performance because even legislators who vote for a statute may not always desire that a statute be implemented as it is written. Current legislatures may also take issue with a statute because they have different preferences than those of the legislature that enacted it.[190]

Despite the difficulties in achieving systematic administrative reform, the potential benefits to society from such reforms demand that politicians and administrators try their best to enact them. Reforms are more likely to be realized if agency administrators and staff engage in a constructive dialogue with the public and the political branches.

B. *The Public and the Environment*

Some commentators believe that further reforms are necessary to increase public participation in the regulatory process,[191] questioning whether agency bureaucrats actually possess useful scientific knowledge that enables them to make more informed decisions than members of the general public.[192] Proponents of a "public" approach to regulation often argue that popular values are entitled to *prima facie* acceptance in public decisionmaking unless there are adequate grounds for deviation.[193] Finally, the major advances in environmental protection have in fact primarily resulted from the combination of public involvement, "republican moments," and legislative credit-seeking, rather than from bureaucratic initiatives or interest group politics.[194]

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189 Rodriguez, *supra* note 49, at 1190.

190 Rodriguez, *supra* note 49, at 1191-92.

191 *See* Hornstein, *supra* note 169, at 633.

192 *See* Clayton P. Gillette & James E. Krier, *Risk, Courts, and Agencies*, 138 U. PA. L. REV. 1027, 1071-85 (1990) (arguing that the quantitative risk assessment creates a misleading sense of certainty and is excessively narrow in focusing expected loss of life while ignoring other issues such as the voluntariness of risk, or the relative concentration or dispersion of damage); Hornstein, *supra* note 169, at 562-64, 583-84, 610-11 (arguing that risk assessment has serious flaws because of data limitations, the use of heuristics, the threat that regulated industries will capture an agency, and failures in comparing different types of health risks or in making value-free decisions).

193 *See* Farber & Hemmersbaugh, *supra* note 1, at 293.

194 The term "republican moment" may be somewhat misleading because it implies that the environmental movement is the product of a few, brief bursts of intense popular support; it is more accurate to say that the environmental movement has enjoyed at least moderate levels of popular support since the

Commentators who favor technocratic decisionmaking often argue that the public is unable to understand complex risk issues[195] and believe that government experts can make better decisions.[196] Proponents of technocratic decisionmaking sometimes point out that there are dangers if populist movements perpetuate unscientific myths about environmental risks.[197]

A crucial question is how to incorporate popular values and participation into a decisionmaking process that also relies upon scientific and technical information.[198] If public risk perceptions

late 1960s, with some peaks that played a role in enacting major pieces of environmental legislation. *See* Donald T. Hornstein, *Lessons From Federal Pesticide Regulation on the Paradigms and Politics of Environmental Law Reform: Politics of Environmental Law Reform*, 10 YALE J. ON REG. 369, 406-20 (1993) (discussing concept of republican moments). *But see* Thomas S. Ulen, *Comments on Daniel A. Farber, "Politics and Procedure in Environmental Law"*, 8 J.L. ECON. & ORG. 82, 86-87 (1992) (questioning whether theory of "republican moments" adequately explains development of environmental movement in 1970s). Some critics of the environmental movement have charged that it primarily serves the interests of upper-middle-class whites, but the emergence of the environmental justice movement in recent years has made environmentalism less elitist. *See* Mark E. Rushefsky, *Elites and Environmental Policy*, *in* ENVIRONMENTAL POLITICS & POLICY: THEORIES AND EVIDENCE 261, (James P. Lester, ed.) (1989) (examining the role of elites in determining appropriate risk levels for environmental decisionmaking).

195 Cognitive error theory has shown that the public is incapable of making consistent decisions about risky options based solely upon the way these options are framed. Breyer, *supra* note 28, at 36; Frank B. Cross, *The Public Role in Risk Control*, 24 ENVTL. L. 887, 899-904 (1994); Hornstein, *supra* note 169, at 604-10. The public habitually overestimates sensational but unlikely risks such as nuclear accidents or waste disposal compared to high-fat diets. *See, e.g.*, BREYER, *supra* note 28 at 36. Study after study shows that the public's evaluation of risk problems differs radically from any consensus of experts in the field, in part because the mass media presents a distorted perspective on relative risks and also as a result of the public's cognitive dissonance or denial of familiar risks. BREYER, *supra* note 28, at 33.

196 *See, e.g.* BREYER, *supra* note 28, at 33-39 (noting that public risk perceptions are often flawed and there is little reason to hope for better risk communication over time).

197 *See* Cross, *supra* note 195 at 887, 949-55 (arguing that reliance upon public misperceptions about risk may in some cases endanger public health); Frank B. Cross, *The Risk of Reliance on Perceived Risk*, RISK: ISSUES IN HEALTH & SAFETY 59, 64-70 (1992) (discussing use of scientific myths by racists and totalitarian regimes to harm minority groups).

198 Possible approaches for involving public values and qualitative data include: (1) developing formulas that assign numbers to, and thus incorporate, qualitative differences; (2) creating a two-stage analytical process based first upon conventional cost-benefit analysis and then upon qualitative factors; and (3) using different forms of citizen participation to educate decision-makers about informed public views about how different risks should be treated.

are based upon factual misinformation or cognitive distortions, then agencies should reject such falsehoods. On the other hand, agencies should seriously consider public beliefs based upon different normative evaluations of risk distribution or the fairness of procedures. In addition, agencies should determine under what circumstances public opinion may not sufficiently take into account the interests of the future. Civic republican theory shows how agencies might be able to achieve a reconciliation between scientific and popular values.

C. *Republicanism and Bureaucratic Deliberation*

Proponents of a civic republican approach to politics distinguish between deliberative democracy, which requires both active political participation and public discussion about what constitutes the good for society as a whole, and pluralist politics, which is based upon the aggregation of competing private interests.[199] Deliberative democracy requires people at least in part to transcend their individual interests and base decisions upon reason rather than on power.[200] While modern civic republican theory explicitly rejects elite control and seeks to prevent any individual from being subservient to other political actors,[201] there is a potential conflict between deliberation and participation if only an elite is interested or willing to engage in deliberative politics.[202]

The role administrative agencies can play in facilitating public participation and deliberation is debatable.[203] Because of their greater distance from the public than the elective branches and their professional or technical training, bureaucrats in some

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[199] *See* Seidenfeld, *supra* note 52, at 1514, 1528-33 (defining civic republicanism); Cass R. Sunstein, *Beyond the Republican Revival*, 97 YALE L.J. 1539, 1541 (1988) (identifying "deliberation in politics" as the first principle of republicanism). Modern civic republican theorists trace their roots to republican political theorists of the American Revolutionary and Constitutional period, but modern versions are not necessarily consistent with their eighteenth century ancestors.

[200] *See* Note, *Civic Republican Administrative Theory; Bureaucrats as Deliberative Democrats*, 107 HARV. L. REV. 1401, 1402-03 (1994); *see generally* Seidenfeld, *supra* note 52, at 1528-33 (defining civic republicanism).

[201] *See* Seidenfeld, *supra* note 52, at 1528-32.

[202] *See* Note, *supra* note 200, at 1403-05; Steven G. Gey, *The Unfortunate Revival of Civic Republicanism*, 141 U. PA. L. REV. 801, 854-93 (1993).

[203] *Compare* Seidenfeld, *supra* note 52 (bureaucracy can play positive role in fostering republican dialogue) *with* Note, *supra* note 200 (arguing republican justifications of bureaucracy contain implicit elitist and antidemocratic tendencies).

ways are better suited than members of the public or even Congress to engage in deliberation and reflect upon the public good.[204] However, even proponents of bureaucratic deliberation recognize the need for congressional and presidential involvement to prevent bureaucratic aggrandizement and to promote public participation.[205] Courts may also play a role in encouraging bureaucratic deliberation and preventing possible abuses by selfish agencies.[206] On the other hand, bureaucratic deliberation may often be elitist, and frequently does not account for public values.[207]

Whether bureaucracies play a constructive role in fostering democratic deliberation and participation, or serve their own political ends or those of powerful interest groups depends upon the agency's institutional structure, the composition of its staff, its mission, and its relationship to the political branches. The remainder of this Article will explore ways that agencies may play a positive role in democratic deliberation and participation. In particular, because of their superior substantive knowledge and the failure of political institutions to represent the unborn, agencies ought to play the lead role in encouraging public, congressional and presidential consideration of the interests of future generations.

D. *Agency Independence*

Since the 1960s, there has been a drastic shift in American public administration, "from limited statutory mandates coupled with considerable administrative discretion to sweeping statutory

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[204] *See generally* Seidenfeld, *supra* note 52, at 1515, 1541, 1563-66, 1570-74; Cass R. Sunstein, *Factions, Self-Interest, and the APA: Four Lessons Since 1946*, 72 VA. L. REV. 271, 281-87 (1986).

[205] *See* Seidenfeld, *supra* note 52, at 1516, 1550-54, 1564-65, 1570-72. Professor Sunstein also appears to be concerned about maintaining the primacy of Congress. Cass R. Sunstein, *Changing Conceptions of Administration*, 1987 B.Y.U. L. REV. 927, 941.

[206] *See, e.g.*, EDLEY, *supra* note 130, at 231 (arguing that courts should be able to force agencies to consider regulatory alternatives using cost-benefit analysis or scientific risk assessment methods if court believes agency analysis would otherwise be deficient even if such requirements are somewhat intrusive); Seidenfeld, *supra* note 52, at 1547-50 (arguing in favor of judicial review of agencies to ensure that agency interpreted statute in a deliberative manner). This Article is more skeptical of the ability of courts to foster better decisionmaking because of their limited knowledge of technical issues and tendency to focus on procedural formalities.

[207] *See* Note, *supra* note 200, at 1417-18.

mandates but increasingly restricted discretion."[208] The origin of this shift is a fundamental change in prevailing American ideas about governance, from the Progressive and New Deal belief in a general public interest implemented by politically neutral professionals, to pluralist theories that there exists no general public interest.[209] Critics of agency discretion have contended that agencies may not serve the public interest for at least three reasons: first, regulated industries may "capture" the agency, especially if the agency must rely heavily upon industry data in making decisions;[210] second, agencies may be unduly influenced by presidential politics and executive agendas, although others argue that the President ought to take the lead role in directing regulatory policies;[211] or third, agencies may develop their own self-interested agendas, which may or may not serve any overall public interest.[212]

The first criticism of greater agency discretion, that an agency official may seek to favor a regulated industry to enhance future employment opportunities within that industry, may not be as serious as it may seem. Conflict of interest statutes limit that possibility, professional staff are primarily recruited by industry based upon their knowledge of both technical issues and the agency, and rigorous enforcement may actually increase industry's demand for the expertise of former government employees.[213] The danger of regulatory capture can be lessened or eliminated by having the agency regulate a wide range of indus-

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208 Andrews, *supra* note 35, at 544.

209 Ackerman & Hassler, *supra* note 106, at 26; Andrews, *supra* note 35, at 544.

210 Mank, supra note 166, at 34, 34 n.1, 49-52, 60-61 (discussing different definitions of capture as well as structural incentives and lack of time may allow industry to dominate agency); Seidenfeld, *supra* note 52, at 1565-66 (potential for agency capture by private interests). Industry may try to influence an agency on issues that attract little public attention. *See also* BREYER, *supra* note 28, at 50.

211 *See* Andrews, *supra* note 35, at 544; Robin Shifrin, Note, *Not By Risk Alone: Reforming EPA Research Priorities*, 102 YALE L.J. 547, 556-58 (1992); Robert V. Percival, *Checks without Balance: Executive Office Oversight of the Environmental Protection Agency*, 54 LAW & CONTEMP. PROBS., Autumn 1991, at 162-66.

212 Andrews, *supra* note 35, at 544; *see also* Seidenfeld, *supra* note 52, at 1563-65, 1570-71; Charles Wolf, Jr., *A Theory of Non-Market Failures*, 55 PUB. INTEREST 114, 126 (1979).

213 *See generally* Mank, *supra* 166, at 49-52, 80; Seidenfeld, *supra* note 52, at 1566.

tries or interests rather than a single industry.[214] The White House[215] or a new reviewing agency might supervise individual agencies to prevent capture. Perhaps the greatest danger of capture comes from special interest groups lobbying Congress[216] or White House staff[217] to put pressure on agencies. Capture is less likely to occur if there is public disclosure and competition among interest groups.[218] Courts might help to ensure that disclosure and public participation requirements are followed by agencies.[219]

The second danger, excessive presidential political influence, can also be minimized in a number of ways. One way is to convert executive agencies into independent regulatory commissions whose commissioners may not be fired by the President, except in statutorily defined circumstances.[220] However, it is not clear

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214 *See generally* Jonathan R. Macey, *Organizational Design and Political Control of Administrative Agencies*, 8 J.L. ECON. & ORG. 93, 93-94 (1992) (arguing Congress can reduce chances of agency capture by having agency regulate several industries); Seidenfeld, *supra* note 52, at 1566 ("An agency organized into distinct offices, each filled by professionals from different backgrounds who communicate with a different clientele, can avoid decisions that reflect a single industry's perspective").

215 Some commentators argue that the President, as the only nationally elected official, can prevent capture, but information costs, and the existence of other factors mean that presidential elections are an imperfect means to elect a person who will serve the public interest. *See* Seidenfeld, *supra* note 52, at 1568-69. Moreover, the President can only imperfectly monitor the OMB and other White House staff. *See* Seidenfeld, supra note 52, at 1569.

216 *See* Seidenfeld, *supra* note 52, at 1567-68.

217 *See supra* note 72 and accompanying text.

218 *See generally* Mank, *supra* note 166, at 49-52, 80; Seidenfeld, *supra* note 52, at 1567.

219 *See* Seidenfeld, *supra* note 52, at 1570. One must be somewhat skeptical, however, of Professor Seidenfeld's view that courts could review whether agencies are seeking to advance the "public interest" because, as Seidenfeld concedes, that concept is often too amorphous to have judicially enforceable meaning.

220 *See, e.g.*, 12 U.S.C. § 242 (1994) (stating that President may remove the seven members of the Federal Reserve Board "for cause"); 42 U.S.C. § 5841(e) (1994) (stating that President may remove commissioners of Nuclear Regulatory Commission for "inefficiency, neglect of duty, or malfeasance in office"); Wiener v. United States, 357 U.S. 349, 356 (1958) (stating that the congressional purpose in creating independent commission was to protect commissioners from presidential removal); A. Michael Froomkin, Note, *In Defense of Administrative Agency Autonomy*, 96 YALE L.J. 787, at 787 nn.1-2 (1987) (discussing statutory restrictions on presidential power to remove commissioners of independent regulatory commissions). In addition, the budgets of many independent regulatory commissions are exempt from prior OMB review before being submitted to Congress. *See* Angel Manuel Moreno, *Presidential Coordi-*

that independent commissions are always more independent than executive agencies because the President usually selects the chair of the commission.[221]

The third danger, that an agency will seek to follow its own agenda at the expense of the public interest, is the most difficult to resolve because risks exist from giving agencies too great or too little independence. On the one hand, when agencies have too little discretion they easily cave in to public pressure.[222] On the other hand, when Congress refuses to set regulatory standards and delegates to an agency the task of balancing the costs to industry against saving human lives, agencies may underregulate[223] because they are unwilling to make these controversial choices in the absence of congressional direction.[224] Additionally, agency staff members may promote their own idiosyncratic views rather than those in the public interest, and it will be difficult for reviewing courts to tell the difference.[225] Simply giving an agency discretion neither guarantees that the agency will actually engage in long-term planning and policy making without guidance from Congress, nor prevents the agency from straying far from the course Congress might want.[226]

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nation of the Independent Regulatory Process, 8 ADMIN. L.J. AM. U. 461, 466 n.18 (1994) (discussing the budgetary process of several independent regulatory commissions).

221 The chair often has greater practical authority than other commissioners. *See* Peter L. Strauss, *The Place of Agencies in Government: Separation of Powers and the Fourth Branch*, 84 COLUM. L. REV. 573, 590-1 (1984) (noting that distinction between presidential authority over executive agencies and independent regulatory commissions is one of degree rather than kind).

222 Proponents of bureaucratic discretion have argued that the public and Congress pressure agencies to spend too much money on well-publicized, but low-risk health issues such as remediating toxic waste dumps than on less publicized, but more dangerous issues such as indoor air pollution, including radon gas. *See* BREYER, *supra* note 28, at 19, 23, 28, 67 (arguing resources should be diverted from low-risk problems such as hazardous waste cleanups to higher risk issues such as indoor smoke and pollution); *but see* Heinzerling, *supra* note 28, at 466-67 (arguing studies cited by Breyer are full of uncertainties and therefore it is not clear that the programs he would devote more resources to are any more worthy than those the current risk regulating system selects).

223 *See* Seidenfeld, *supra* note 52, at 1563-65 (discussing problem of agency lethargy).

224 *See, e.g.*, John P. Dwyer, *The Pathology of Symbolic Regulation*, 17 ECOLOGY L.Q. 233 (1990); Mank, *supra* note 53, at 314.

225 *See* Seidenfeld, *supra* note 52, at 1570-71.

226 One problem with regulatory flexibility is that an expert agency can always use uncertainty as an excuse to do nothing or to engage in endless introspective analysis. Applegate, *supra* note 110, at 302-04 (discussing the

Another problem with giving agencies greater deference is the question of the constitutional appropriateness of congressional delegation to administrative agencies.[227] As a practical matter, however, courts are unlikely to revitalize the nondelegation doctrine because strict application of that principle would invalidate numerous statutes.[228] Accordingly, the real questions concern types of issues which agencies possess greater institutional competence to decide, and the degree to which Congress ought to delegate authority to agencies.

There are ways to strike a balance between giving agencies some flexibility to apply their expertise and providing appropriate direction from Congress. Congress could make greater use of "fuzzy bright line" statutes that set out upper or lower limits on risk or cost, while giving an agency considerable flexibility in setting regulations within congressional boundaries.[229] An alternative approach that would also combine congressional direction and agency discretion is to have Congress set priorities, goals, or overall regulatory agendas rather than specific standards.[230] Most importantly, Congress needs to consider how to design an organizational bureaucracy that has the freedom to address long-term risk issues but also remains accountable to the public.

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rationalist critique of technocratic decisionmaking, which doubts that flexibility, without more, can ensure technocratically sensible results); Alyson C. Flournoy, *Legislating Inaction: Asking the Wrong Questions in Protective Environmental Decisionmaking*, 15 HARV. ENVTL. L. REV. 327 (1991).

227 *See generally* Thomas O. Sargentich, *The Delegation Debate and Competing Ideals of the Administrative Process*, 36 AM. U. L. REV. 419 (1987). Opponents of delegation often argue that vague delegations delegitimize representative governance or suggest that statutory vagueness leads to an overall reduction in public welfare. *But see* Stewart, *supra* note 53, at 328-43 (arguing that delegation is appropriate, but that the political branches could greatly improve efficiency by directing agencies to use economic incentives rather than centralized prescriptive regulation).

228 Since 1937, courts have usually refused to invoke the delegation doctrine to invalidate broad congressional delegations of power to agencies, concluding such questions ought to be resolved through political mechanisms of representative government. Stewart, *supra* note 53, at 326.

229 Mank, *supra* note 53, at 267, 300-02, 309-13, 344.

230 For toxic substances, Congress could direct an agency to achieve the greatest overall risk reduction possible within the budget allocated to the agency, or to attack situations involving the maximum risk or the lowest marginal cost of reduction. Congress could also indicate general preferences, such as breadth versus depth: a statute might direct an agency to remedy many problems at least superficially or to solve a few completely. *See* Applegate, *supra* note 110, at 281-82, 304-05, 330-36, 346, 352-53.

VI
A PROPOSED SUPERAGENCY

The organizational design and structure of an agency largely determines its performance and its accountability to the public.[231] To improve long-term environmental planning and to protect future generations, Congress should create a Superagency with considerable technical expertise to address problems such as global warming. To some extent, the Superagency would take the lead in developing paternalistic policies to protect future generations and might even, to the extent it has discretion, occasionally act in a countermajoritarian way. To promote deliberative dialogue with different interest groups, members of the Superagency ought to circulate among various governmental entities and should conduct public discussion fora to determine public interest and to educate the general public.

A. *Previous Proposals*

Previous proposals to improve environmental decisionmaking have failed to address the interests of future generations. The proposed Superagency would have explicit authority to act upon their behalf, and thus would represent a different approach.[232]

1. *Yellin's Executive-Legislative Commission*

Joel Yellin has proposed the creation of an environmental advisory commission that would include executive and legislative branch decisionmakers, in addition to experts from outside government, to review environmental programs and to address areas in which scientific knowledge and technical data are incomplete.[233] The commission would recommend policy changes and

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[231] *See* Macey, *supra* note 214, at 93-94, 99-109 (arguing that Congress can strongly influence an agency's long-term behavior by establishing the agency's organizational structure and jurisdiction). *But see* Jonathan R. Macey, *Separated Powers and Positive Political Theory: The Tug of War Over Administrative Agencies*, 80 GEO. L.J. 671, 674-75, 702-03 (1992) (acknowledging that the initial establishment of an administrative agency's organizational structure and jurisdictional parameters is not conclusive; both the judiciary and the President have independent influence over an agency).

[232] *See infra* notes 265-73 and accompanying text.

[233] Under Yellin's proposal, the President would appoint a commission that would include the chairpersons of the Council for Environmental Quality and the Council of Economic Advisors, the president of the National Academy of Sciences, the Attorney General, and selected members of Congress. The commission would also include rotating representatives from the biological sciences,

submit proposals on updating environmental statutes to the relevant congressional committees. Its enabling legislation would include procedures to assure floor consideration of its proposals during the year in which they are presented to Congress.[234]

Yellin's proposed commission would have only an advisory role so it could not exercise excessive executive power or assume responsibilities properly belonging to courts.[235] Yellin states that his suggestion for a hybrid commission is motivated by the success of previous *ad hoc* commissions assigned to address specific issues.[236] To some extent, these commissions were successful in depoliticizing issues by serving as an informal bargaining mechanism outside the public eye.[237] It is unlikely, however, that any commission or agency facing broad risk regulation issues can escape political forces.[238]

Reforming environmental decisionmaking and addressing long-term issues requires a commission or agency with substantial resources, time, and commitment. Yellin's proposed commission lacks sufficient authority and resources to make such reforms. It is also questionable whether, for instance, the Attor-

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physical sciences, and engineering communities. The agency heads concerned with a particular issue such as the environment or worker safety would sit as *ad hoc* commission members during deliberations on an issue within their jurisdiction. *See* Yellin, *supra* note 106, at 1327-28.

234 Yellin, *supra* note 106, at 1327. Other commentators have proposed similar procedures. *See* STEPHEN BREYER, REGULATION AND ITS REFORM 366 (1982); Gouvin, *supra* note 7, at 490-91 (citing sources).

235 Yellin, *supra* note 106, at 1327 nn.161, 164 (discussing and attempting to address potential objections to hybrid executive-legislative commissions raised by GUIDO CALABRESI, A COMMON LAW FOR THE AGE OF STATUTES 60-65 (1982) (arguing that hybrid executive-legislative commission for updating statutes would either exercise unchecked executive power or take on responsibilities properly belonging to courts).

236 Yellin cites the following examples: (1) the Warren Commission on President Kennedy's assassination; (2) the Kerner Commission on civil disorders, including race riots and antiwar protest, in 1968; (3) the Social Security Commission that reported on the system's funding and future; and (4) the Scowcroft Commission report on the MX missile system. Yellin, *supra* note 106, at 1327 n.163.

237 The Defense Base Closure and Realignment Commission has been fairly successful in addressing the politically sensitive issue of closing military bases, a task that Congress found too politically difficult to set criteria for or to accomplish itself. *See* Michael A. Fitts, *Can Ignorance Be Bliss? Imperfect Information as a Positive Influence in Political Institutions*, 88 MICH. L. REV. 917, 952-53 & n.121 (1990); Seidenfeld, *supra* note 52, at 1542.

238 *See generally* Gouvin, *supra* note 7, at 488 (arguing that attempts to depoliticize risk regulation will fail).

ney General, the chairperson of the Council of Economic Advisors, or important members of Congress would really have the time or interest to explore complex scientific issues each year. A different type of commission or agency is needed that would have substantive powers to issue or review regulations and an administrator or commissioner whose primary job would be to decide scientific and environmental policy questions.

2. *Shifrin's Congressional Experts*

Robin Shifrin has criticized proposals for risk-based priority-setting on the grounds that they will unduly increase the power of agency scientists and the executive branch in general.[239] Instead, she proposes a vaguely described "bilateral delegation" process by which the congressional environmental science committee would set research priorities with input from congressional and executive science agencies and deference to the advice of congressional scientific staff.[240]

Shifrin's proposal fails to address the fundamental problem of the fragmented congressional committee system. Shifrin does not demonstrate how congressional committees or staff could include more opportunities for public input or perform better than EPA has as part of its attempts to set priorities.[241] A further drawback to the proposal is that congressional oversight often results in micromanagement of agencies and subjects them to conflicting demands from different committees that are not necessarily representative of Congress and may be less accountable to the public than the Administrator of EPA. Additionally, the electoral cycle and budget process lead Congress to focus largely on short-term issues. Shifrin expresses fear of giving the executive too much power, but fails to make a convincing case that

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239 Shifrin, *supra* note 211, at 556-64.

240 Shifrin argues that "[b]ilateral delegation would shift power in the Executive away from OMB to EPA and its [Office of Research and Development] ORD and [Science Advisory Board] SAB, and in Congress, away from the appropriations committees to the environmental science committees, with possible contributions from the congressional Office of Technology Assessment (OTA)." Shifrin, *supra* note 211, at 566. *But see* Andrews, *supra* note 97, at 524 n.37 (criticizing Shifrin's proposal because of its vagueness and failure to specify "what such a 'bilateral delegation' would involve as a specific legal procedure").

241 *See* Andrews, *supra* note 35, at 524 n.37.

bilateral delegation to congressional experts would produce better regulatory results.[242]

There are more effective ways to integrate congressional and executive environmental decisionmaking. For instance, members of congressional and executive staffs might exchange places to gain a deeper understanding of both substantive issues and procedural routines in the other branch of government without interfering with each's autonomy. Such exchanges would have greater impact in an agency in which rotation and breadth of experience among different agencies was crucial in achieving senior policymaking positions.

3. *Breyer's Civil Service Elite*

In his 1993 book, *Breaking the Vicious Circle*, Judge, now Justice, Breyer proposes to create a centralized executive branch agency, group, or council that would be responsible for overseeing and reviewing all environmental and health regulations. He sharply criticizes existing regulatory programs and argues that public ignorance of risk issues, congressional overreaction to public fears, and the tendency of regulatory agencies to bow to public opinion and political pressures creates a "vicious circle" that often leads to regulatory overkill by agencies.[243] Breyer, however, believes that regulatory agencies are the "weakest point" in the vicious circle, and suggests they are more capable of being reformed than Congress.[244]

Breyer contends that existing health and environmental agencies do not have sufficient discretion or expertise, and proposes to create an elite reviewing body of civil servants within the executive branch to coordinate risk regulation, using the French *Conseil d'Etat* as a model.[245] He discusses the need to provide such a group with civil service tenure to insulate them from public opinion and with significant career rewards to attract highly

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242 *See* Shifrin, *supra* note 211, at 566-68 ("In order to prevent the increase of executive influence over scientific matters, authority for risk based priority setting should not be delegated solely to specialists in the Executive."). *But see* Andrews, *supra* note 97, at 524 n.37 (arguing that the "underlying theme of [Shifrin's] article seems limited to fear of any increase in executive influence.").

243 BREYER, *supra* note 28, at 42-51.

244 *See* BREYER, *supra* note 28, at 55 ("Any practical, institutionally oriented solution must also take account of the extreme difficulty of changing human psychology, press reactions, or Congressional politics.").

245 BREYER, *supra* note 28, at 59-60.

qualified staff members.[246] Following the *Conseil*'s model, he would enhance the capabilities of the proposed agency's staff by rotating them through several governmental institutions.[247] Even some critics of his overall proposal have reacted favorably to the rotation scheme and the Office of Information and Regulatory Affairs (OIRA) within OMB has already announced plans to begin such a program.[248] Breyer's centralized group would possess: multidisciplinary expertise, thus correcting OMB's overemphasis on economics and relative lack of scientific expertise; an increased ability to make interagency comparisons, set priorities, and implement transfers; greater insulation from single agency politics; and perhaps a clearer mission.[249] Breyer argues that a centralized risk management group, council, or agency would be able to address the likely risk-related impact of future scientific changes better than existing agencies.[250]

Breyer's proposed bureaucratic elite would have interagency jurisdiction, political insulation, prestige, and authority unprecedented in American history.[251] As examples, Breyer points to the OIRA and the *Conseil*, but neither has authority to determine substantive regulatory policies.[252] He acknowledges that the American public's skepticism toward government will make it difficult to provide our civil servants with the authority and

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246 BREYER, *supra* note 28, at 61-62. In particular, staff members might enjoy a special civil service career path that would enable members to work in line agencies such as EPA or in Congressional committees and then back to the group to enable the staff to develop scientific and political expertise. BREYER, *supra* note 28, at 61-62.

247 BREYER, *supra* note 28, at 70-71.

248 *See* Pildes & Sunstein, *supra* note 66, at 87 (criticizing Breyer's overall proposal but finding merit in the rotation proposal).

249 BREYER, *supra* note 28, at 68.

250 BREYER, *supra* note 28, at 67. For example, medical research advances are increasingly enabling scientists and physicians to identify particular groups of persons who are genetically predisposed to develop cancer when exposed to certain chemicals. BREYER, *supra* note 28, at 67, 118 n.40 (citing sources). The group could consider creative, cost-effective alternatives to traditional pollution control regulation such as genetic counseling.

251 *See* David A. Dana, *Setting Environmental Priorities: The Promise of a Bureaucratic Solution*, 74 B.U. L. REV. 365, 372 (1994).

252 *See* BREYER, *supra* note 28, at 68-72; Dana, *supra* note 251, at 372. Breyer concedes, "Of course, America is not France; nor are the substantive problems of risk regulation exactly the same as the problems of administrative regularity, legality, and efficacy that typically face the *Conseil d'Etat*." BREYER, *supra* note 28, at 71.

prestige of the French civil servants that he admires so greatly.[253] Breyer suggests that his proposed group might take over the role of OIRA, or, alternatively, that OIRA might be enhanced by adding scientifically or substantively trained experts to work with existing policy analysts and economists.[254]

While Breyer's assessment of how well the public and Congress understands risk assessment issues has considerable merit, his solution, as well as that of many other technocrats, underplays the need for public legitimacy and participation by placing such important risk decisions within a small cadre of experts.[255] Arguably, Breyer's small elite is more vulnerable to capture by special interest groups precisely because it would deliberately be insulated from public pressures.[256] Breyer never fully addresses how his elite will escape the political pressures that created the vicious circle in the first place.[257] Finally, Breyer offers no convincing evidence that an elite agency with a small staff would outperform existing agencies in addressing uncertain risks.[258]

Breyer is at pains to refute the objection that his proposal is undemocratic, arguing that the existence of a single centralized agency could facilitate democratic control by reducing a mass of individual decisions to a smaller number of policy choices that Congress or the public could more easily understand, and for which the public could hold the executive branch accountable.[259]

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253 BREYER, *supra* note 28, at 63, 70-72 (acknowledging the American public's skepticism toward government authority, but discussing ways to develop bureaucratic elite similar to French *Conseil d'Etat*).

254 BREYER, *supra* note 28, at 71-72, 79.

255 *See* Adam M. Finkel, *A Second Opinion on an Environmental Misdiagnosis: The Risky Prescriptions of Breaking the Vicious Circle*, 3 N.Y.U. ENVTL. L.J. 295, 356-57 (1994) (arguing Breyer's proposal would concentrate power in a small elite and thereby undermine public participation in environmental decisionmaking); Mank, *supra* note 31, at 372-73 (observing public participation is important as a value in itself, a means of developing a broader administrative record, and a means of lessening the risk that special interests will capture an agency).

256 *See* Finkel, *supra* note 255, at 356-57.

257 *See* Gouvin, *supra* note 7, at 482-83 (arguing Breyer fails to address public choice criticisms of political process).

258 *See* Finkel, *supra* note 255, at 357 (arguing that Breyer presents no evidence how his proposed elite will outperform existing agencies); Dana, *supra* note 251, at 381-83 (criticizing Breyer's proposal for underestimating value judgments inherent in risk assessment).

259 He argues:

> [T]he proposal takes no power from Congress. The Executive Branch currently exercises the power that any such group would possess, but does so in a disorganized, somewhat random way. Chaos is not democracy; to

Breyer, however, prefers that elite bureaucrats address most regulatory issues without any public debate and the success of his proposal apparently depends upon eliminating the public from most issues: "[N]ot every risk-related matter need become a public issue. A depoliticized regulatory process might produce better results, hence increased confidence, leading to more favorable public and Congressional reactions."[260] Breyer sometimes acknowledges that public values ought to be considered, but he gives too little attention as to how elite decisionmaking might be harmonized with the recognition of these values and how democratic deliberation and consensus-building might have positive societal benefits that go beyond increasing regulatory efficiency.[261]

In addition, Breyer does not sufficiently address how presidential politics might distort decisionmaking in the White House or agencies. He is critical of OMB's current lack of scientific expertise and also points out the weaknesses of the Council and Office of Science Advisor, but he suggests placing his proposed elite within OMB.[262] The protection of future generations, however, may require a bureaucratic elite both more independent from the White House and closer to the people.

B. *A Proposal for a Superagency*

The Superagency that this Article proposes Congress establish would not only possess the interagency coordinating characteristics discussed by Breyer, but would also engage in public deliberation about how to protect future generations. To accom-

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organize rationally the exercise of power may mean its better, but not its greater, exercise.

BREYER, *supra* note 28, at 73. Furthermore, he states:

> [T]he existence of a single, rationalizing group of administrators can thus facilitate democratic control, for it would reduce a mass of individual decisions to a smaller number of policy choices, publicize the criteria used to make those choices, and thereby make it easier for Congress, or the public, to understand what the Executive Branch is doing and why.

BREYER, *supra* note 28, at 73-74.

260 BREYER, supra note 28, at 55-56.

261 *See generally* Pildes & Sunstein, *supra* note 66, at 89 (arguing that Breyer's proposal does not adequately address how to incorporate public judgments about risk).

262 BREYER, *supra* note 28, at 68-72; *see also* SUNSTEIN, *supra* note 2, at 108 (proposing to give OMB authority over long-range research and regulatory coordination).

plish this goal, the Superagency would need considerable independence and sensitivity to popular values.

Even if the Superagency is an executive agency, there are ways to increase its independence from presidential control. At a minimum, the Superagency should supplant the OMB's role in reviewing environmental regulations, and not be subject to OMB review. In addition, if politically feasible, the Superagency should be led by bipartisan commissioners serving staggered terms so that a President would not be able to appoint all the commissioners in a single term. While the President should be able to choose the chair of the Superagency, the President's removal power should be minimal so that partisan removals are either limited or disfavored. Furthermore, members of the Superagency's staff would circulate among the staffs of important congressional leaders, the Executive Office of the President, and substantive government agencies.[263] Such rotation should increase the staff's political influence and its understanding of popular values.

As long as the Superagency regularly reports to Congress, perhaps every two years, Congress should give the Superagency considerable discretion to change the priorities of individual agencies based on the types of problems that are anticipated in the future, possible solutions, and their distributional and economic consequences.[264] The Superagency would provide a comprehensive ranking of long-term problems in order of their significance and would suggest which problems should be addressed first in light of competing policy justifications[265] such as absolute risk, cost-effectiveness, the availability of information, distributional consequences, and other factors. Given the uncertainties of risk assessment and the consequences of present actions on the future, the Superagency might make decisions based upon reasonable estimates and develop policies based upon the

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[263] Another interesting question is whether fellows from industry, universities, or public interest groups should serve for either short or long periods in government programs. Professor Bromley, former Science Advisor to President Bush, argues that overly strict conflict-of-interest rules have made it increasingly difficult for members of private industry to serve as White House fellows. *See* BROMLEY, *supra* note 94, at 47-48. While there are dangers from conflicts-of-interest, government ought to encourage mid-career fellows from private industry to provide insights into industry science, organization, and political viewpoints.

[264] *See* Applegate, *supra* note 110, at 305 (discussing short-term planning).

[265] Applegate, *supra* note 110, at 310 (discussing priority setting).

relative risk of chemicals rather than confront the more difficult task of establishing absolute standards of risk.[266] Before promulgation, the plan would be subject to limited judicial review, and to possible legislative revision.[267] Finally, the plan would be binding during the period of its operation unless the Superagency issued a report to the President and Congress justifying a change based upon an emergency or significant new information.[268]

Congress should specifically authorize the Superagency to represent future generations in courts or on siting committees. In charitable trust law, the attorney general serves as the protector of the public for whom the trust was established.[269] By analogy, a public official could represent or appoint a trustee or guardian *ad litem* to represent future generations in courts.[270] While existing agencies could perform this task, the Superagency would possess specific statutory authority and would develop special competence. In addition, the Superagency could appoint representatives for future generations to serve on local siting negotiation boards to determine whether to accept a hazardous facility and to negotiate compensation from the developer.[271] To monitor the Superagency's success in protecting future generations, Congress could appoint an ombudsman to receive complaints and to conduct performance investigations.[272]

C. *Paternalism and Countermajoritarianism*

This Article proposes to give the Superagency at least limited paternalistic or countermajoritarian powers to protect future generations, and possibly present-day minority groups, from unwise depletion of resources or degradation of the environment.

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266 Applegate, *supra* note 110, at 324-28.

267 Applegate, *supra* note 110, at 310.

268 Applegate, *supra* note 110, at 310. Courts have routinely determined whether or not a workplace hazard is an emergency or not. Applegate, *supra* note 110, at 310 n.161, 345 n.378. (citing cases).

269 *See*, Edith Brown Weiss, *The Planetary Trust: Conservation and Intergenerational Equity*, 11 ECOLOGY L.Q. 495, at 566 (1984).

270 *See* Weiss, *supra* note 269, at 565-66. The terms "guardian *ad litem*" and "trustee" are used to refer to the group or individual who would be authorized to represent the interests of future generations in a lawsuit. While the terms "guardian *ad litem*" and "trustee" provide useful analogies, they would not be subject to all of the formalities of traditional trust or family law. Weiss, *supra* note 269, at 566 n.314.

271 Mank, *supra* note 31, at 413-18..

272 Weiss, *supra* note 269, at 572-76.

These powers would be tempered by statutory language requiring the Superagency to engage in public deliberation.

1. *Agency Countermajoritarianism*

Legal scholars have written extensively about what Professor Alexander Bickel called "the countermajoritarian difficulty" with judicial review.[273] While semi-independent administrative agencies clearly cannot overturn or refuse to enforce a statute enacted by Congress, Congress could specifically authorize countermajoritarian decisionmaking in specified circumstances, or, alternatively, deliberately make a statute ambiguous so as to leave room for administrative discretion under the *Chevron* doctrine.[274] Because an agency does not possess the judicial authority to invoke the Constitution to overturn a majoritarian decision, the agency must pursue Professor Bickel's strategy of gaining majoritarian support in the foreseeable future for its decisions.[275] An agency cannot get too far ahead of the public and must sustain long-term public support,[276] but there is a place for government officials to take a leadership role in convincing the public that policies that protect minorities or future generations are important.

One way the Superagency could take such a leadership position would be to hold public hearings and to receive public comments before taking major actions so that any countermajoritarian actions are preceded by extensive public dialogue and attempts at consensus-building.

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[273] *See* ALEXANDER BICKEL, THE LEAST DANGEROUS BRANCH: THE SUPREME COURT AT THE BAR OF POLITICS 16 (2d ed. 1986) (explaining "The Counter-Majoritarian Difficulty": "[t]he root difficulty is that judicial review is a countermajoritarian force in our system."); LAURENCE H. TRIBE, AMERICAN CONSTITUTIONAL LAW, § 1-7, at 10-12 (2d ed. 1988) (discussing "antimajoritarian difficulty"); Steven P. Croley, *The Majoritarian Difficulty: Elective Judiciaries and the Rule of Law*, 62 U. CHI. L. REV. 689, 711-12, 765-78 (1995) (discussing representation-oriented models of judicial review).

[274] Statutes are often ambiguous and *Chevron* requires courts to defer to an agency's permissible construction of an ambiguous statute, and therefore an agency often has some policy discretion. *See supra* notes 61-66 and accompanying text.

[275] *See generally* BICKEL, *supra* note 273, at 24 *passim*; Croley, *supra* note 273, at 766 (arguing that Bickel, in THE LEAST DANGEROUS BRANCH, *supra* note 273, justified countermajoritarian judicial review as a temporary check until courts could gain support from new majority).

[276] *See generally* Farber & Hemmersbaugh, *supra* note 1, at 293.

Since some minority interests, such as industry groups, are well represented, and some diffuse majority interests, such as environmental protection, are poorly represented,[277] the Superagency should seek to promote both minority and majority interests that are likely to be underrepresented in democratic deliberation. Moreover, although the environmental justice movement has shown that certain minority groups often live in disproportionately polluted areas and suggests that existing agencies do not sufficiently address their concerns,[278] the existing political process has acted to some extent to address these environmental disparities. Some minority groups have at least some say in the environmental decisionmaking process.[279] EPA is beginning to consider possible disproportionate impacts on minorities and low-income communities when it issues permits.[280] Accordingly, the Superagency may want to focus on an even more underrepresented group, future generations, whose interests have received much less recent attention than those of minority groups.

There are practical limitations on how strongly an agency ought to act to protect future generations. Given the uncertainties of scientific predictions, a Superagency probably should not try to convince the present generation to make huge sacrifices for a distant benefit. Nevertheless, a Superagency could try to persuade people to avoid creating substantial risks of future disaster.[281] Because most types of pollution or resource depletion that have long-term effects, such as global warming or the destruction of stratospheric ozone, are also likely to have a significant short-term impact, an agency might focus on convincing the

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277 *See* Cass R. Sunstein, *What's Standing After* Lujan*? Of Citizen Suits, "Injuries," and Article III*, 91 MICH. L. REV. 163, 218-20 (1992).

278 *See generally* Mank, *supra* note 31, at 334-44.

279 President Clinton has signed Executive Order 12,898, which requires all federal agencies to investigate to what extent their policies may create environmental inequities in minority or low-income populations. Exec. Order No. 12,898, 59 Fed. Reg. 7629 (1994). During the 103d Congress, in which the Democratic Party controlled the House and Senate, a number of environmental justice bills were introduced, although none was passed. *See* Mank, *supra* note 31, at 351-57.

280 *See* In re Chemical Waste Management of Indiana Inc., RCRA Appeal Nos. 95-2 & 95-3, 1995 WL 395962 (EPA), (U.S. E.P.A. Envtl. App. Bd. June 29, 1995) (holding EPA has discretion to consider environmental justice factors in issuing RCRA permit, but that agency did not err in issuing permit despite petitioner's claims of disproportionate impact).

281 *See* Farber & Hemmersbaugh, *supra* note 1, at 294-95.

public to alter short-term behavior and thereby indirectly avoid long-term problems.

2. *Paternalism and Environmentalism*

There has been considerable controversy about the definition of paternalism, but it usually involves an action by A to benefit B that A would carry out regardless of whether B has consented to it.[282] Since John Stuart Mill's essay *On Liberty*, liberal philosophers have argued that political authority should avoid acts of paternalism. This liberal tradition has generally distrusted paternalistic legislation,[283] although that aversion has weakened somewhat since the New Deal. In addition, one may legitimately question whether administrative agencies are institutionally competent to exercise paternalistic authority.[284] While paternalism is normally at odds with civic republican ideals of deliberation and consensus-building, paternalism is essential to promote the public good for future generations.

The Superagency could act paternalistically to protect current vulnerable minorities because short-term paternalism is necessary to protect certain minority or low-income communities from the disproportionate siting of hazardous facilities; these groups often lack sufficient education to understand the risks of such facilities, and have insufficient resources to address the problem of disproportionate impact on their own.[285] Other com-

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[282] *See* David Shapiro, *Courts, Legislatures and Paternalism*, 74 VA. L. REV. 519, 522-23 (1988). Paternalism should be distinguished from self-paternalism, as in Greek mythology where Odysseus supposedly tied himself to the mast in order to navigate past the sirens to prevent himself from giving into temptation at a future time. *Id.* at 523-24.

[283] SAGOFF, *supra* note 8, at 64; Mark Sagoff, *We Have Met the Enemy and He is US or Conflict and Contradiction in Environmental Law*, 12 ENVTL. L. 283, 301 (1982); Shapiro, *supra* note 282, at 519; Eleanor N. Metzger, Comment, *Driving the Environmental Justice Movement Forward: The Need for a Paternalistic Approach*, 45 CASE W. RES. L. REV. 379, 379 (1994).

[284] One of the few existing examples of administrative paternalism is the authority of the Social Security Administration to pay benefits to friends, relatives, or qualified organizations when the "interest of [the beneficiary] would be served thereby . . . . " *See* 42 U.S.C. § 1383(a)(2)(A)(ii) (1994); Margaret G. Farrell, *Administrative Paternalism: Social Security's Representative Payment Program and Two Models of Justice*, 14 CARDOZO L. REV. 284-98 (1992); Shapiro, *supra* note 282, at 520 (discussing relationship between institutional competence and appropriateness of judicial as opposed to legislative paternalism).

[285] This commentator justifies paternalistic legislation on the grounds that "[i]n the environmental justice arena, the group being regulated is incapacitated in the sense that they lack the requisite information and education needed to

mentators, on the other hand, have argued that developing a community-based political movement is superior to relying upon paternalistic statutes or government agencies.[286] Paternalistic legislation or government action may actually harm minorities if such measures prevent the siting in minority areas of hazardous facilities that bring greater benefits than risks.[287]

Voting or educational reforms, however, could better enhance the ability of minority or low-income communities to assess whether or not to accept a hazardous facility than government paternalism.[288] Federal or state agencies should act paternalistically only as a last resort to prohibit the siting of hazardous facilities in areas where there is already an excessive risk to human health.[289]

In one sense, paternalism in favor of protecting future generations raises difficult problems because we do not know what the preferences of our children and grandchildren will be.[290] Yet, we must recognize that our decisions today will determine who they will be and will significantly influence what preferences they

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effectively cure environmental inequities." *See* Metzger, *supra* note 283, at 397. Even this commentator states that her proposed paternalistic legislation should be evaluated periodically and that "once the basis for an effective non-paternalistic approach is in place, governments should cease in their role as decision-makers, and continue only in their role as educators, and resource providers." Metzger, *supra* note 283, at 397-98.

286 *See generally* Luke W. Cole, *Empowerment as the Means to Environmental Protection: The Need for Environmental Poverty Law*, 19 ECOLOGY L.Q. 619 (1992).

287 The existence of racial disparities in the siting of polluting facilities is different from the presence of purely negative disparities in job markets or the provision of municipal services because these facilities typically bring both benefits in the form of jobs and taxes as well as environmental harms. *See* Mank, *supra* note 31, at 332-33, 398 *passim*; *see also* Johnine J. Brown, *Chasing the "Tail" of Environmental Racism; Who is the Pit Bull?*, ILL. LEGAL TIMES, Sept. 10, 1994, at 10 (noting that the federal government's initiative on environmental equity is paternalistic and "predictably wrong-footed: it will make it harder, if not impossible, to do business in poor and minority neighborhoods").

288 For instance, federal, state or local governments could adopt electoral reforms such as the use of weighted proportional or cumulative voting to provide fair representation of minorities or high-risk residents in electing a local siting committee that can negotiate whether or not to accept a facility and the appropriate level of compensation from a facility owner. *See* Mank, *supra* note 31, at 413 n.495. In addition, the government or developers could fund technical assistance grants to place residents on a more level playing field with developers or government officials. Mank, *supra* note 31, at 409 n.474.

289 Mank, *supra* note 31, at 401-06.

290 *See* Daniel A. Farber, *Environmentalism, Economics, and the Public Interest*, 41 STAN. L. REV. 1021, 1027-28 (1989).

will have.[291] Thus, any reasonable policy we may choose is likely to find acceptance with the future we create.[292]

Society cannot simply rely upon the market to make long-term decisions. Many natural resources or beauties are public goods whose market value is not easily estimated,[293] and therefore economic efficiency alone is not a sufficient criterion upon which to base decisions about resource allocations and usage.[294] Decisions about long-term public projects require agencies to select the appropriate discount rate in determining whether these projects are worthwhile, but OMB's lack of scientific expertise raises questions about its ability to evaluate the total impact of environmental regulations on both the present and the future.[295] Thus, the government cannot avoid making value judgments about the future.

The preservation of wilderness requires at least some paternalistic decisions by the present generation on behalf of the future. Professor Ronald Dworkin, who generally espouses a liberal philosophy at odds with paternalism, has suggested that the preservation of wilderness is necessary to allow future generations the moral opportunity to establish their own values, including environmental values, and therefore that preserving the environment for future generations may not only be "consistent" with liberalism, "but in fact sponsored by it."[296] Mark Sagoff argues that paternalism is inevitable with respect to future generations because the only way to provide them with wilderness is to restrict current development and that the consequences of doing so will have an impact on the "character of future individuals, their environment, and their values."[297]

Society cannot avoid shaping the preferences and environment of future generations, and therefore should do the best job possible. A Superagency with the techno-bureaucratic virtues

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291 SAGOFF, *supra* note 8, at 63-66; Farber, *supra* note 290, at 1028 n.31; Sagoff, *supra* note 283, at 301-02.

292 SAGOFF, *supra* note 8, at 63-66.

293 *See supra* notes 21-27 and accompanying text.

294 *See generally* SAGOFF, *supra* note 8, at 8-9, 17-18, 26-29, 114-18, 225-26 nn.2-13, 228-30 nn.6-27 (arguing against economic efficiency and in favor of environmental values and citing sources for economic position); Farber, *supra* note 290, at 1021-24.

295 *See supra* notes 75-87 and accompanying text.

296 *See* Ronald Dworkin, *Liberalism*, *in* PUBLIC AND PRIVATE MORALITY 113, 141-42 (Stuart Hampshire ed., 1978).

297 SAGOFF, *supra* note 8, at 64-65; Sagoff, *supra* note 283, at 302.

that Breyer describes and a broad public understanding of environmental issues is the best model for setting future priorities.

D. *Potential Dangers of Bureaucratic Elitism*

There has been considerable debate about whether a scientific elite or the government should control scientific decisionmaking.[298] The fundamental premise of scientific thinking is based upon finding the best or truest among competing ideas and therefore is at odds with "the American political tradition, which is premised on the theory that all ideas should be approached skeptically."[299] If scientific problems could be separated from political ones, there would be a good case for the creation of new institutions such as science courts that would allow scientific experts to make decisions largely free from popular control.[300]

In most important regulatory problems, however, there is an inevitable interrelationship between scientific and political issues and the tools of analytical rationality are too narrow to address the complex nature of such problems. Accordingly, some argue that we should rely on political decisionmakers to make regulatory decisions despite their limited ability to assess scientific information. This system would preserve democratic control even though it may be somewhat inefficient.[301] Arguably, politicians make the final decisions about economics, diplomacy, and military strategy even though there are experts in each of these fields; therefore, we should treat science the same way.[302]

Some commentators have argued that the environmental movement is becoming less dominated by scientific and government experts and more influenced by popular activism, especially at the local and state levels.[303] These scholars might argue that the Superagency proposal is too elitist and that citizen activism can address the needs of future generations. While there is certainly a role for popular participation in addressing long-term problems, it is not clear that the general public is as interested in long-term issues as it is in short-term ones. Moreover, the public

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298 Carter, *supra* note 142, at 1337-41.

299 Carter, *supra* note 142, at 1337.

300 Carter, *supra* note 142, at 1337-38; Yellin, *supra* note 106, at 1307-16.

301 Carter, *supra* note 142, at 1337-39.

302 Carter, *supra* note 142, at 1340-41.

303 *See generally* W. Douglas Costain & James P. Lester, *The Evolution of Environmentalism*, *in* ENVIRONMENTAL POLITICS & POLICY 34-6 (James P. Lester ed., 2d ed. 1995); Rushefsky, *supra* note 194, at 296.

lacks the technical expertise to predict long-term consequences without the assistance of scientific elites. Furthermore, the public sometimes has a short attention span when dealing with certain issues, although environmentalism in general has been receiving consistent public attention. For instance, during the summer of 1988, there was a rapid increase in popular concern about global warming, but there was a relative decline by the early 1990s as the mass media shifted attention to other issues.[304] While popular participation and elite decisionmaking are often seen as being at odds, the Superagency could increase popular interest in long-term environmental issues by conducting media and educational campaigns.

Environmental public interest groups such as the Sierra Club are not an adequate substitute for a Superagency. These groups generally lack the resources to investigate complex technical problems. While environmental groups can help educate citizens, the government potentially has the resources and organizational infrastructure to reach a broader portion of the public. Additionally, it is questionable whether public interest groups have standing to represent future generations. Finally, conservative critics often charge that environmental groups are elitist because their membership is concentrated among upper-middle-class professionals and that the leaders of these groups often hold extreme political views.[305] The growth of the environmental justice movement and other local citizen environmental groups has arguably made the environmental movement less elitist,[306] and the fact that environmental groups are repeat players in the political marketplace means that they have an incentive to present honest information. Nevertheless, there is evidence that governmental elites have views that correspond better to the views of claimed constituencies than do the leaders of interest group elites,[307] and that suggests that government bureaucracies may be more representative and accountable to the public than environmental public interest groups.

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304 *See* Sheldon Ungar, *The Rise and (Relative) Decline of Global Warming as a Social Problem*, 33 Soc. Q. 483, 496-97 (1992).

305 *See* Rushefsky, *supra* note 194, at 287-95 (summarizing recent political science literature on environmental elites).

306 *See* Costain & Lester, *supra* note 303, at 35-36; Rushefsky, *supra* note 194, at 296.

307 *See* Rushefsky, *supra* note 194, at 293.

This Article proposes a synthesis of elite and public decisionmaking. The staff of the proposed Superagency would circulate among the Executive Office of the President and Congress to gain a better understanding of the political process and would consider public values such as avoiding involuntary risks along with more quantitative approaches to risk assessment.[308] There would be extensive opportunities for public participation and education.[309] Nevertheless, Congress would give the Superagency the mission of protecting future generations, requiring it to take the lead in protecting the future, and even, in exceptional cases, resisting majoritarian sentiments.[310]

Undoubtedly, there are dangers in elitism. There is the danger that science may be controlled politically to predict or deny certain environmental problems or to sustain present action or win larger budgets.[311] One possible way to minimize the politicalization of the Superagency is to have other agencies or universities actually conduct long-term research and to limit the role of the Superagency to supervising such research. Civilian university research might provide the benefit of outside perspectives, provided the researchers do not sycophantically follow the views of the funding agency. Furthermore, research on long-term issues ought to be subjected to independent peer review by scientists outside of a given agency to make the process more objective.[312] If the Superagency's budget is not dependent upon the results of the research, then it will have less reason to exaggerate long-term environmental risks. In addition, the Superagency would be less likely to use science for political reasons if it is headed by bipartisan commissioners, even if it is an executive agency.[313] Nevertheless, the possibility that the Superagency could act in a self-

308 *See supra* note 265 and accompanying text.

309 *See supra* notes 282-83 and accompanying text.

310 *See supra* note 285 and accompanying text.

311 Christenson, *supra* note 2, at 395; *see also* RONALD BAILEY, ECO-SCAM 119-21, 134-35 (1993) (arguing that the National Aeronautics and Space Administration exaggerated the dangers from the destruction of stratospheric ozone to win larger research budgets).

312 Some proponents of regulatory reform propose subjecting agency risk assessment and cost-benefit analyses to outside peer review. *See* Graham, *supra* note 64, at 64. Absent any time constraints, peer review makes sense, but it may be unwise in some cases if it unnecessarily delays the issuance of important regulations. For long-term issues, there is usually more time to study an issue, and therefore outside peer review should be the norm.

313 *See supra* notes 264-67 and accompanying text.

serving manner remains. Ultimately, democratic processes such as congressional oversight and public disclosure are needed to maintain a balance between scientific expertise and popular values. Because scientific hypotheses must be replicated and accepted by a critical peer group, science in a democratic society is more likely to prevent empowered elites from achieving self-serving results than to serve as a subtle means of elite control.[314]

While this Article generally favors technocratic decision-making by a techno-bureaucratic elite, that system poses dangers. On average, a higher proportion of non-Hispanic whites and Asians receive college degrees, especially Ph.D.s in the sciences and engineering, than Hispanics or African-Americans. In addition, women hold only about 2% of American physics Ph.D.s.[315] There have been attempts to increase the number of minority Ph.D.s in the sciences and engineering, but progress has been slow,[316] and it may be more difficult to attract minorities in light

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314 *See* Cross, *Perceived Risk*, *supra* note 197, at 68 (arguing science plays "the important political function . . . in the modern liberal-democratic state" of combatting "the ability of empowered elites to command action based on arbitrary or self-serving motives. . . .").

315 For persons ages 25 to 29 in 1992, the proportions with bachelor degrees were 26.7% for whites, 10.6% for blacks, and 11.4% for Latinos. RICHARD J. HERRNSTEIN & CHARLES MURRAY, THE BELL CURVE: INTELLIGENCE AND CLASS STRUCTURE IN AMERICAN LIFE 729 n.5 (1994). Women hold only about 2% of the 30,000 American physics Ph.D.s. Dale R. Corson, *The United States Has No Adequate Mechanism to Set Long-Range Research Policy*, *in* SCIENCE AND TECHNOLOGY ADVICE TO THE PRESIDENT, CONGRESS AND JUDICIARY 97 (William T. Golden ed., 2d ed. 2d prtg. 1995). In 1992, blacks received 31 engineering and 86 life sciences doctorates, while Asian-Americans obtained 213 and 175 degrees respectively and whites 1,744 and 4,210. Rhonda Reynolds, *Doctorates Up . . . But to What Degree?*, BLACK ENTERPRISE, June 1994, at 40. According to the 1990 census, blacks made up 12.1% of the population, but only 1.9% of employed Ph.D. scientists and engineers in 1991; Hispanics comprised about 9% of the population, but only 1.6% of the Ph.D. workforce; and Native Americans earned only 0.2% of such degrees, even though they constituted 0.8% of the general population. Elizabeth Culotta & Karen Fox, *Trying to Change the Face of Science*, 262 SCI. 1089 (Nov. 12, 1993). By contrast, Asian-Americans comprised 2.9% of the general population, but 6.9% of Ph.D. scientists and engineers. *Id.* In addition, 60% of engineering Ph.D.s, 50% of math Ph.D.s and almost one-third of life sciences Ph.D.s go to foreigners, especially Asians from China, India, Taiwan, Korea, and developing nations on the Pacific Rim. Constance Holden, *Foreign Nationals Change the Face of U.S. Science*, 261 SCI. 1769 (Sept. 24, 1993).

316 Culotta & Fox, *supra* note 315, at 1089 (noting that in 1992, blacks earned only about 40 more science and engineering doctorates than they did in 1975); Reynolds, *supra* note 315, at 40 (noting in 1992, blacks received 31 engineering and 86 life sciences doctorates compared to only 9 engineering and 69 life sciences Ph.D.s in 1982).

of cutbacks in the sciences following the end of the Cold War.[317] Thus, Hispanics and African-Americans are likely to be underrepresented on any elite scientific and bureaucratic council unless affirmative steps are taken to increase their representation, but continuation of affirmative action programs is likely to be a contentious political issue in the 1996 elections.[318] The political strength of large minority groups, however, is likely to ensure that their views are heard, if not always followed, even if they are statistically underrepresented on the staff of the Superagency.[319] In any case, the Superagency should take special care to include the views of both underrepresented minorities and poorly organized majorities.

It is possible to imagine scenarios in which elite groups, including scientists and bureaucrats, act in their own self-interest against the majority.[320] This Article contends that the professional norms of the proposed techno-bureaucratic elite in combination with provisions for enhancing democratic dialogue will improve the quality of decisionmaking for Americans of all colors and income strata.

E. *Will it Work?: A Global Warming Example*

A fundamental issue is whether administrative agencies can actually make sound decisions about long-term environmental problems. Many commentators have argued that there are too many uncertainties about complex environmental issues and not

317 Sharon Begley, *No Ph.D.s Need Apply*, NEWSWEEK, Dec. 5, 1994, at 62 (tracing downsizing in the defense and pharmaceutical industries which has led to rising rates of unemployment among scientists, especially for new Ph.D. graduates); Malcóme W. Browne, *Math and Science Not What They Used to Be*, SACRAMENTO BEE, Mar. 27, 1994, at FO3 ("[J]ob cutbacks will especially hurt women and members of minorities who have long been underrepresented in the classroom and the laboratory.").

318 *See generally* John Harwood, *Center Stage: Racially Tinged Issues Dominate the Debate As Campaigns Unfold*, WALL ST. J., July 24, 1995, at A1, A6 (predicting that racial issues such as affirmative action are likely to figure prominently in 1996 elections).

319 Minority groups in a democracy by definition do not usually have the same political strength as the majority, but that does not mean they have no voice or influence. *See supra* note 283 and accompanying text.

320 *See, e.g.*, HERRNSTEIN & MURRAY, *supra* note 315, at 523-26 (suggesting the possibility that in the near future cognitive and financial elites in America might create an authoritarian custodial state in which members of the underclass, mainly the poor and uneducated, will have few rights and will be herded into high-tech versions of Native American reservations).

enough reliable scientific information for agencies to make better decisions than the general public.[321] Agencies have made serious mistakes in the past,[322] and therefore there is more reason to believe they will be wrong in predicting events twenty-five or fifty years from now.[323] On the other hand, there is an argument that society's ability to extrapolate into the future is improving as scientific knowledge grows and our ability to create computer models of various future scenarios develops.[324]

If we reject long-range planning because it will often be wrong, the alternative is to do nothing, which may result in a sizeable number of fatalities that could have been avoided in a cost-effective manner.

There is strong evidence that atmospheric concentrations of carbon dioxide and other greenhouse gases will greatly increase during the next century unless emissions are reduced below current levels.[325] The impact of these increasing concentrations on

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321 *See* Applegate, *supra* note 110, at 298-99, 299-304 (discussing the informational critique, which questions the practical ability of an agency to apply its expertise); Heinzerling, *supra* note 28, at 461-68 (arguing that Breyer uncritically accepts studies that favor his conclusions while criticizing studies using the same methodology that suggest the need for greater regulation).

322 *See generally* Applegate, *supra* note 110, at 303-04 (discussing the historical critique of technocratic decisionmaking, which observes that New Deal-type agency decisionmaking does not always produce effective or efficient regulation).

323 For example, the pessimistic predictions in the Club of Rome study, that argued for significant restraints on economic growth, have not yet been borne out, although they may be in the next century. *See* THE LIMITS TO GROWTH (Dennis Meadows ed. 1972) (detailing Club of Rome study); BAILEY, *supra* note 311, at 138 (noting Club of Rome prediction that the world's oil supplies would be depleted by the 1990s proved to be wrong and led to wasteful government subsidies for synthetic fuels); Geza Feketekuty, *The Link Between Trade and Environmental Policy*, 2 MINN. J. GLOBAL TRADE 171, 177 (1993) (arguing that the anti-growth pessimism of the Club of Rome is wrong and that an increase in the global economic output has a benefit for the environment).

324 *See* Rosenkranz, *supra* note 1, at 70.

325 *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 1994 13 (1995). Since the beginning of the Industrial Revolution in about 1800, the amounts of carbon dioxide, methane, and nitrous oxide in the atmosphere have been increasing. *See* DIXY LEE RAY ET AL., TRASHING THE PLANET 32-34 (1990); Robert C. Balling., Jr., *Global Warming: Messy Models, Decent Data, and Pointless Policy*, *in* THE TRUE STATE OF THE PLANET 85-87 (Ronald Bailey ed., 1995). These increases are caused, among other things, by fossil fuel burning, which increases carbon dioxide and nitrous oxide concentrations; rice paddy agriculture, which increases methane; deforestation, which eliminates trees that recycle carbon dioxide into oxygen; and the use of some fertilizers, which increases nitrous oxides. *Id.* at 86.

global mean temperatures involves numerous complex factors.[326] Many scientists believe that there will be significant global warming during the next century and some predict catastrophic consequences such as the melting of polar ice caps.[327] There is growing evidence that average global temperatures will inevitably rise between one and 3.6 degrees Fahrenheit during the next century and that if no action is taken, average temperatures could rise between 1.44 and 6.3 degrees.[328] After the year 2100, there

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326 The issue of global warming is complex because there has been significant natural variation over the centuries in the level of greenhouse gases, in the Earth's climate, in the amount of volcanic dust in the air, and in solar radiation and sunspot activity. *See generally* RAY, *supra* note 325, at 33-35, 39-41; Balling, *supra* note 325, at 87-95; Jerry Bishop, *Long Ignored Cycle in Climate Suggests Worse Greenhouse Effect Than Thought*, WALL ST. J., April 11, 1995, at B5. An increase in the amount of greenhouse gases does not automatically increase the Earth's temperature, possibly because of countervailing influences such as oceanic absorption of carbon dioxide as sea temperatures increase, increased plant growth that in turn leads to greater removal of carbon dioxide, or increased low-level cloud cover that may result in greater reflection of solar radiation. *See* RAY, *supra* note 325, at 35; Balling, *supra* note 325, at 87-95.

327 *See* Jose L. Fernandez, *Global Warming Legislation: Putting the Carbon Genie Back In the Bottle*, 42 SYRACUSE L. REV. 1095, 1097 (1991) (citation omitted) (majority of scientists believe increasing concentrations of greenhouse gases will result in significant global temperature increases and eventually will melt the polar ice caps); Salil Patel, Comment, *Reducing Carbon Dioxide Emissions to 1990 Levels By the Year 2000: What Are the Options and Can the United States Achieve this Reduction Without Disrupting the Economy*, 3 DICK. J. ENVTL. L. & POL'Y 79, 80 (1993) (300 leading climate scientists estimate global temperatures will rise between three to five degrees centigrade by 2100); William K. Stevens, *Global Warming Experts Call Human Role Likely*, N.Y. TIMES, Sept. 10, 1995, at 1, 6 [hereinafter Stevens, *Global Warming*] (noting draft sections of new report by the Intergovernmental Panel on Climate Change find growing evidence to support view that human activities are at least partially responsible for global warming); William K. Stevens, *Scientists Say Earth's Warming Could Set Off Wide Disruptions*, N.Y. TIMES, Sept. 18, 1995, at A1, A5 [hereinafter Stevens, *Scientists Say*] (reporting on draft sections of new report by the Intergovernmental Panel on Climate Change suggest significant economic, social, and environmental dislocation from global warming); *Introduction*, *in* THE IMPACT OF GLOBAL WARMING ON TEXAS (Gerald R. North et al. eds., 1995) (noting global temperatures are likely to rise between two and three degrees centigrade during next century). *But see* BAILEY, *supra* note 311 at 141-67 (arguing many scientists believe that global temperatures during the 21st century will rise by between a negligible amount to 1 degree centigrade; even many of those who fear significant global warming will take place have lowered their warming estimates); Balling, *supra* note 325, at 84-103 (arguing scientific evidence is against the existence of a greenhouse crisis).

328 *See* Stevens, *Global Warming*, *supra* note 327, at 1 (reporting findings of draft summary of new report by the IPCC).

would be further increases in temperature, perhaps fifty to seventy percent more than what took place by 2100.[329]

In 1992, despite the controversies about global warming, twenty-four industrialized nations attending the United Nations Conference on Environment and Development in Rio de Janeiro signed the Framework Convention on Climate Change, which established the goal of stabilizing emissions of greenhouse gases at their 1990 levels by the year 2000;[330] however, it is now clear that most will fail to meet that target.[331] In addition, the Convention had only limited application to developing nations, whose use of fossil fuels is rapidly increasing,[332] and did not address what should be done after the year 2000.[333] By 1995, the Intergovernmental Panel on Climate Change,[334] set up jointly by the United

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329 Stevens, *Scientists Say*, *supra* note 327, at A5.

330 *See* Framework Convention on Climate Change, United Nations Conference on Environment and Development, 31 I.L.M. 849; *see generally* Elizabeth P. Barratt-Brown et al., *A Forum for Action on Global Warming: The UN Framework on Climate Change*, 4 COLO. J. INT'L ENVTL. L. & POL'Y 103 (1993); Donald M. Goldberg, *Negotiating the Framework Convention on Climate Change*, 4 TOURO J. TRANSNAT'L L. 149 (1993); Marian Nash Leich, *United Nations Framework Convention on Climate Change*, 87 AM. J. INT'L L. 103 (1993); Martin J. LaLonde, *The Role of Risk Analysis in the 1992 Framework Convention on Climate Change*, 15 MICH. J. INT'L L. 215 (1993). Many environmentalists were critical, however, of the Convention's failure to set binding targets and deadlines, and blamed the Bush Administration for weakening its provisions. *See generally* Barratt-Brown, *supra* note 330, (criticizing lack of firm deadlines in Climate Convention and blaming Bush Administration).

331 *See* Frank Bajak, *Top Climatologists Sound New Alarms on Global Warming*, HOUS. POST, Apr. 9, 1995 at A28; Charles Petit, *CO2 Emissions Fuel Deep Concern*, S.F. CHRON., Apr. 17, 1995, at A6.

332 Developing nations argued that it would be unfair for industrialized countries to impose heavy restrictions on the use of fossil fuels by developing nations when developed nations consumed most of these fuels and such restrictions would hinder the ability of developing nations to join the developed world. *See* William K. Stevens, *Climate Talks Enter Harder Phase of Cutting Back Emissions*, N.Y. TIMES, Apr. 11, 1995, at C4. As a result, developing nations insisted that developed nations provide financial assistance to help them compile data on their greenhouse emissions and to conduct energy planning. *See* Barratt-Brown et al., *supra* note 330, at 112-13; Developing nations have refused to have specific emission targets apply to them, although they have opened the door to discuss more explicit measures after 1997. *See* Stevens, *supra*, at C4; *see also* Petit, *supra* note 331, at A6 (discussing failure of 1992 Convention to address growing emissions of developing countries).

333 *See* Barratt-Brown et al., *supra* note 330, at 111 ("It is unclear whether 4(2)(a) and (b) taken together would require emissions to remain at 1990 levels after the year 2000.").

334 *See* G.O.P. Obasi & Elizabeth Dowdeswell, *Foreward to* IPCC, CLIMATE CHANGE 1994, *supra* note 325, at vii (discussing history of the IPCC).

Nations Environment Program and the World Meteorological Organization, had determined that only drastic reductions in greenhouse emissions could prevent a buildup of these gases and preliminarily recommended that global carbon dioxide emissions be stabilized at sixty percent of their 1990 level by the year 2100.[335] In the spring of 1995, nearly 120 nations met in Berlin and agreed to hold more meetings about setting goals beyond the year 2000.

William Nordhaus, an economics professor at Yale University, has created a model that examines the effect of seven different strategies for controlling greenhouse gases on world output and consumption. He found that until the middle of the twenty-first century there will be little difference between a policy of no controls and one of optimal internalization, perhaps through a carbon tax, but that by the year 2100, the optimal strategy would increase annual output by $200 billion in 1989 prices compared to no controls.[336] Nordhaus's model suggests that society should think about how our consumption will affect peoples' lives in the year 2100. To optimize the level of reductions in greenhouse

335 *See* IPCC, CLIMATE CHANGE 1994, *supra* note 325, at 13 (reporting atmospheric levels of carbon dioxide will substantially increase during next century unless there are significant reductions in emissions); Bajak, *supra* note 331, at A28; Mark Jaffe, *Global Warning: Scientists Now Say the 1992 Earth Summit Treaty Wasn't Enough*, PHIL. INQUIRER, Mar. 6, 1995, at G1. The Panel's draft report is currently being reviewed by scores of scientists.

336 *See* WILLIAM D. NORDHAUS, MANAGING THE GLOBAL COMMONS: THE ECONOMICS OF CLIMATE CHANGE 79-97 (1994) (analyzing seven approaches to climate change policy: (1) no controls; (2) optimal policy; (3) ten-year delay of optimal policy; (4) stabilizing emissions at 1990 rates; (5) 20% emissions reduction from 1990 levels; (6) geoengineering; and (7) climate stabilization). Nordhaus' model does take into account economic growth, warming, and damages beyond 2100. *Id.* at 83. Nordhaus found that stabilizing greenhouse gases at 1990 levels would reduce output by $3 trillion and that stabilizing climate would cost even more, $7 billion dollars. *Id.* at 86. Nordhaus' model is based upon a relatively high discount rate, albeit lower than OMB's; using a lower discount rate would argue for more restrictive climate-change policies. *See id.* at 122-35 (arguing for a real discount rate that begins around six percent per annum and then declines to about three percent as growth slows, and contending use of lower discount rate is contrary to both theory and empirical data). Because of the uncertainties about global warming, Nordhaus uses Monte Carlo and decision analysis to examine different scenarios and "suggests that a carbon tax may be a more efficient instrument in light of the enormous uncertainties" than quantity restrictions, the optimal level of which varies greatly depending upon informational assumptions. *Id.* at 184. Because the total amount of greenhouse gases will grow even if we cap emissions at 80% of 1990 levels, an approach that Nordhaus believes is probably too costly, society will likely have to adapt to significant increases in global temperatures by 2100. *Id.* at 86-90, 189.

emissions during the next century will require comprehensive planning and a series of coordinated policy changes over an extended period. The Superagency could revise its estimates of warming and its planned responses if new research demonstrates that the problem is less serious than many currently believe.

Despite Vice President Gore's view that global warming is "the world's most important environmental threat,"[337] President Clinton is relying upon a plan based overwhelmingly upon voluntary measures by industry and EPA's Green Lights energy efficient lighting program.[338] EPA and the Department of Energy are spending relatively small amounts of money on energy conservation and efficiency programs as a means to reduce greenhouse gases.[339] EPA Administrator Carol Browner has conceded that these modest measures are inadequate to stabilize emissions in the long term, and has called for broader research into new technologies and continued research into nuclear safety and waste disposal options that could maintain the option of commercial nuclear power.[340]

A Superagency potentially could do more to address the problem of global warming than any single agency. First, the Superagency would have greater independence and therefore could resist political pressure to do either too much or too little. At the same time, the rotation of Superagency staff among the executive branch and congressional committees would help the Superagency gauge whether it was politically feasible to propose a carbon tax, which would almost certainly lead to opposition from fossil fuel producers.

Second, the Superagency could expend greater resources on developing better and more complete computer models of global

337 *Climate Change: Global Warming Top Environment Threat, Warrants Cooperative Effort, Gore Says*, DAILY ENV'T REP. (BNA) 77, at d11 (Apr. 22, 1994) (quoting from speech by Vice President Gore at White House Conference on Climate Change).

338 *Id.*; *Air Pollution: Clinton Action, Plan Seeks Voluntary Industry Participation, Investment*, 24 Env't Rep. (BNA) 1178 (Oct. 22, 1993) [hereinafter *Clinton Action Plan*].

339 *Clinton Action Plan*, supra note 338, at 1178 (noting that EPA is requesting about $70 million and the Department of Energy a little over $200 million for energy conservation and efficiency programs designed to reduce greenhouse gases).

340 *Clinton Action Plan*, *supra* note 338, at 1178.

warming than exist today.[341] Existing governmental agencies and the Intergovernmental Panel on Climate Change are already conducting such research, but the Superagency could coordinate it, possibly obtain greater funding and then conduct a public information campaign to win the support of the President, Congress, and the general public. The Surgeon General performs a similar public information function in conveying the fruits of medical research about smoking or AIDS to the public and the political branches.

Third, the Superagency would have a broader perspective than current agencies or independent regulatory commissions and could formulate more comprehensive strategies to prevent or adapt to climatic changes. It could decide to what extent renewable energy sources or electric cars should be promoted to avoid global warming problems or long-term shortages of fossil fuels,[342] decide whether or not to encourage the use of nuclear power to reduce our consumption of fossil fuels,[343] and plan which mixture of renewable, fossil, and nuclear energy best addresses our energy needs and minimizes damages to the environment.

In the short term, drastic reductions in carbon dioxide emissions would require unrealistic changes in consumption and lifestyle, and therefore, some amount of global warming over the next decades is probably unavoidable.[344] Accordingly, the National Academy of Sciences has recommended adaptation to, in

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341 Until recently, computer models attempting to assess global warming have been fairly simplistic and unable to predict actual temperature increases in the Earth's atmosphere, but the most recent models used by the Intergovernmental Panel on Climate Change are much better. *See generally* Stevens, *Global Warming*, *supra* note 327, at 6 (noting that while previous computer models of global warming had serious problems, the most recent models seem to be more accurate).

342 *See* Bill McKibben, *Not So Fast*, N.Y. TIMES MAGAZINE, July 23, 1995, at 24-25 (arguing we must drastically reduce our use of fossil fuels and use of electric cars to avoid greenhouse catastrophe). *But see* RAY, *supra* note 325, at 127-33 (arguing solar, wind, and other alternative energy sources are impractical in the near future as a substitute for conventional or nuclear power); Lester Lave et al., *Environmental Implications of Electric Cars*, 268 SCI. 993, 994-95 (1995) (arguing that electric cars pose serious environmental problems due to lead-acid batteries).

343 *See* RAY, *supra* note 325, at 42, 123-41 (arguing that government should encourage use of nuclear energy).

344 *See* NORDHAUS, *supra* note 336, at 86-90, 189; Balling, *supra* note 325, at 101-03 (believing realistic measures are likely to have minimal impact on global warming).

addition to prevention of, climate change.[345] The Superagency could study how farmers might adapt to climate change,[346] or the relocation of people from coastal areas, if the predictions of some that global warming will result in partial melting of the polar ice caps prove to be accurate.[347]

Existing agencies could perform the same research or planning functions as the proposed Superagency, but, as Part IV demonstrated, agencies currently do not spend enough resources on long-term anticipatory planning, they often lack specific statutory authority to reallocate priorities, and there are insufficient institutional or statutory mechanisms to encourage interagency coordination and planning.[348] It is impossible to prove *ex ante* that the Superagency's staff would perform more competently than EPA's,[349] but there is the potential for improved performance if they take advantage of the benefits of rotating among different executive agencies and congressional committees, the availability of greater resources, the intellectual freedom resulting from greater independence, and the ideological mission of protecting future generations.

Because many long-range environmental problems are international in scope, we need to develop international institutions and treaties that can effectively address them.[350] The alternative

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345 *See* COMMITTEE ON SCIENCE ENGINEERING, AND PUBLIC POLICY, NATIONAL ACADEMY OF SCIENCES, POLICY IMPLICATIONS OF GLOBAL WARMING 76-78 (1991); NORDHAUS, *supra* note 336, at 189. *But see* Herman E. Daly, *Ecological Economics*, 254 SCI. 358 (1991).

346 *See generally* Harry M. Kaiser et al., *Adaptation to Global Climate Change at the Farm Level*, *in* AGRICULTURAL DIMENSIONS OF GLOBAL CLIMATE CHANGE 136-51 (Harry M. Kaiser & Thomas E. Drennen eds., 1993) (discussing potential impacts of climate change on farmers in Nebraska and Minnesota).

347 *But see* BAILEY, *supra* note 311, at 149-50 (stating concerns that global warming will result in the melting of the polar ice caps are contradicted by recent evidence of polar cooling).

348 *See supra* notes 163-81 and accompanying text.

349 *See* Finkel, *supra* note 255, at 357 (arguing that Breyer fails to establish that his civil service elite would perform more effectively than EPA's staff).

350 *See generally* WEISS, *supra* note 1, at 289-91; Ben Boer, *Institutionalizing Ecologically Sustainable Development: The Roles of National, State, and Local Governments in Translating Grand Strategy Into Action*, 31 WILLAMETTE L. REV. 307 (1995); Fernandez, *supra* note 327, at 1102 (discussing how international law might address problem of global warming); Mary Pat Williams Silveira, *International Legal Instruments and Sustainable Development: Principles, Requirements, and Restructuring*, 31 WILLAMETTE L. REV. 239 (1995).

may be unilateral international coercion by some states to prevent others from creating irreversible environmental harm.[351]

CONCLUSION

A comparative institutional analysis suggests that executive or independent agencies are the most capable of conducting anticipatory research and long-term planning. White House institutions lack sufficient staff to match the capabilities of agencies and are more vulnerable to changes in presidential administrations than executive agencies. Despite Shifrin's proposal, the fragmented committee structure of Congress makes it ill-suited to conduct long-range planning. Even in the unlikely event that courts gave public interest groups standing to represent future generations, courts could do little to address long-term environmental problems without depending upon the research and planning efforts of the executive branch. While agencies are probably the best institutions to perform long-term research and planning, much needs to be done to improve their capabilities in terms of increasing funding and improving coordination of efforts among agencies.

The superior technical expertise of agencies at long-term issues is not enough to justify giving them *carte blanche* control over the future. Depending upon their institutional framework, the training of their staff, and their relationship to the political branches, agencies can foster the "republican" political virtues of public deliberation and participation. By educating the public, Congress, and the Executive Office of the President about how our behavior may affect the future, agencies could improve the depth of public discussion about such issues as global warming and increase the number of persons who participate in rulemaking or public hearings on these matters. There are dangers from excessive bureaucratic isolation, elitism, or self-interest, but these can be managed if the political branches provide the ultimate leadership.

At the very least, Congress should strengthen NEPA and other environmental statutes to require EPA and other government agencies to consider the impact of proposed regulations or projects over the next one hundred years. The danger is that

351 *See generally* Owen Donald Jones, *The Box H Problem: A Justification for Unilateral International Coercion*, 15 YALE J. INT'L L. 209 (1990); Christenson, *supra* note 2, at 396.

agencies might perform a relatively perfunctory analysis both because of budget limitations and the press of short-term issues.

There are a number of intermediate steps Congress or the President could take short of creating a full-fledged Superagency. First, Congress or the President could strengthen scientific environmental policymaking within the executive branch by increasing the scientific staff within OMB, increasing funding and staffing for the Council on Environmental Quality, or giving the Office of Science and Technology a greater role in environmental planning and research. Second, Congress and the President could increase EPA's research and planning budget, and give the agency greater statutory authority to reallocate resources from lower to higher risk issues. Third, Congress and the President could establish an environmental research center that would have purely a research and advisory role in long-term planning.[352] Such a research center might be less vulnerable to political influence than the proposed Superagency, but would have no authority to effect changes. Fourth, Congress might create a general committee or permanent staff to oversee regulatory issues.

Finally, Congress could create a Superagency that can perform long-range planning and research on the future consequences of environmental policies, review proposed agency regulations, reallocate agency resources to higher priority issues, and coordinate the work of overlapping agencies. The Superagency would need to have a significant degree of political independence to protect future generations, but it would also have to be actively involved with the political branches to be successful. Because none of the three branches of government is well-suited to address long-term problems, the Superagency would have at least limited authority to act in a countermajoritarian or paternalistic fashion to protect future generations. In a democratic society, however, the Superagency would eventually have to win over the political branches to function successfully and should take into account public values when formulating its policies.

Providing the Superagency with the independence it needs depends upon creating a political culture that recognizes the value of protecting future generations and long-term technocratic

352 *See generally* Eric J. Gouvin, *Truth in Savings and The Failure of Legislative Methodology*, 62 U. CIN. L. REV. 1281, 1371-75 (1994)(proposing the creation of Office of Public Policy within Congress to identify issues and alternative solutions).

planning. The Superagency could not simply make decisions without consulting the public, but would have to engage in an educational campaign to show the general public how present decisions often have long-term consequences. Thus, the creation of an elitist institution to address long-term environmental problems would probably increase public interest and participation regarding these issues rather than diminish citizen activism. In addition, the circulation of its staff among Congress and the executive branch, including the White House, would hopefully provide the Superagency with the political connections and savvy to achieve its mission, and make it more sensitive to popular values.

To create an effective institution for long-term planning, society must strike a balance between providing the institution with sufficient incentives to perform its mission and at the same time guard against creating a bureaucracy that exists to serve its own needs. To prevent the Superagency from predicting long-range disasters in order to bolster its budget, the Superagency might manage the research of other agencies and universities. These institutions themselves can lobby for more funding, but the Superagency would have less incentive to sponsor unnecessary research if its budget did not depend upon particular research results.

The proposed Superagency represents an ideal model for conducting long-term environmental research and planning. It may be impractical today to create a Superagency, but existing agencies could adopt some of the proposed reforms such as rotating employees or increasing funding for long-term projects. Most of all, government agencies should encourage the public to think about the consequences of their actions upon future generations.