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### Publication Date

1995

A1458  
no. 95-3

✓ 5/24/95

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Assuring Institutional Constancy:  
Requisite for Managing Long-Lived Hazards<sup>1</sup>

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Jan. 1995

**Abstract:** Institutional constancy of agencies and firms is discussed as a concept and an increasingly important political requirement for the operation of hazardous systems in the U. S. Situations that increase demands for it are outlined and a basis for analysis and improving constancy is proposed.

Managing large organizational systems poses extraordinary challenges for public institutions when such systems promise substantial benefits but are also so technically or financially hazardous in their design that grievous harm could befall producers and citizens. Not only are such institutions subject to the expected demands for effective performance, they are also pressed to operate at nearly failure free levels - well beyond

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<sup>1</sup> This paper elaborates the concept discussed briefly in La Porte, T.R. and Metlay, D. 1995. Institutional Trustworthiness: Requisites and the Challenges of Constancy, Conference on Resources, Risk and Responsibility, December, 1994, and is a revision of A. Keller and T. R. La Porte, Assuring Institutional Constancy: A Crucial Element of Public Trust and Confidence in Managing Hazards of the 21st Century, presented to the panel on Deciding for the Future: Balancing Risks and Benefits Fairly Across Generations, National Academy of Public Administration, Washington, D.C., June 1994. We thank Jim Holmes for his comments.

that expected for most organizations operating systems of lesser hazard.<sup>2</sup> When these systems are capable of large scale and/or widely distributed harm that may not be detected for several generations, the public is rightly concerned that such operating and regulating organizations are worthy of the public's trust.<sup>3</sup>

Since the public cannot evaluate institutional performance on the basis of familiarity (the knowledge and information required being too esoteric), nor on the basis for timely outcome (success or failure issuing too far in the future), they seek assurances that these institutions will be uncompromising in the pursuit of highest quality operations through the relevant life times of the systems in question. This means that the quality of both external relations and internal operations should reassure communities of interest and stakeholders that their views will be taken seriously and that organizational processes will result in immediate adjustment to potential error.<sup>4</sup> When harmful effects may be visited upon future generations, our concern here, assurances of continuity or institutional constancy take on increasing importance.<sup>5</sup>

Indeed, institutional constancy -- faithful, unswerving adherence to commitments and effective actions over many work generations -- competes with institutional flexibility as an important public value in some policy domains.<sup>6</sup>

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<sup>2</sup> See La Porte, T. R. and Consolini, P.M. 1991. Working in Practice but not in Theory: Theoretical Challenges of High Reliability Organizations. Journal of Public Administration Research and Theory, 1, (Winter): 19-47; and Roberts, K.H. 1989. New Challenges to Organizational Research: High Reliability Organizations. Industrial Crisis Quarterly, 3: 111-125, for a review of this situation.

<sup>3</sup> See DOE. 1993. Earning Public Trust and Confidence: Requisites for Managing Radioactive Wastes. Secretary of Energy Advisory Board, Washington, D.C. November. Dan Metlay, Study Director, and La Porte and Metlay, op. cit.

<sup>4</sup> DOE, *ibid.*

<sup>5</sup> Other qualities of public trust and confidence have been ventilated in the DOE, *ibid.* Institutional constancy, while identified as an important element there, was not emphasized.

<sup>6</sup> Our referent here is mainly public organizations though, in our view, the argument applies with nearly as much force to the private sector in the U.S. especially those firms responding to the strong economic incentives for short term gain and deferral of costs.

Certainly current leaders of some institutions are pressed to assure the public (especially able opinion leaders) that, as a condition of winning approval and resources to initiate or continue programs, their agencies and corporate contractors credibly be expected to keep agreements and commitments with potentially affected communities far into the future. The policy domains, for example, of radioactive waste management, the control of nuclear weapons, the management of water and biological resources, and the extraction of mineral resources present this situation in an extreme form.<sup>7</sup> In such policy domains, there are often a number of contentious issues. Institutional constancy is likely to be among them. Assuring it would be a necessary but not a sufficient condition for arriving at commitments and agreements in the first instance.<sup>8</sup>

Without such assurances, intense conflict is likely and the many means available in our legal system to paralyze threatening programs can be employed. That is, the U.S. adversarial political culture and formal legal structure make it possible for groups with intensely held views to delay, often substantially modify, or halt programs they fear or with which they disagree.<sup>9</sup> (See Insert I for examples.) One important source of fear and/or disagreement is the suspicion that agreements and commitments made by agents of current institutions may not be kept in the future. The challenge of assuring institutional constancy has become increasingly apparent as more large scale

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<sup>7</sup> Managing radioactive wastes and other environmentally hazardous materials involves hazards that are likely to require active attention for hundreds of years. Indeed, mine closures are now designed in some cases assuming the need for "perpetual monitoring", some forms of radioactive wastes are highly dangerous for over 200,000 years, while some forms of dangerous chemicals never lose their capacity for harm.

<sup>8</sup> We are grateful to Jim Holmes for reminding us of this point.

<sup>9</sup> See Robert A. Dahl. 1965. A Preface to Democratic Theory. Chicago: University of Chicago Press, and his later work.

**Insert I**  
**Cases of Citizen Induced Paralysis**

**1. WIPP** -- Numerous political and legal impediments have been placed in the way of the Waste Isolation Pilot Project, including a legal injunction against DOE's jurisdiction over the WIPP site (1991. Injunction stops WIPP from Accepting Waste. *ENR*, 227, 23 (December 9): 16), challenges of the technical preparedness of the site and the containers used for transportation and storage, and stalls imposed by EPA and OSHA regulations over various aspects of the project such as requirements that emergency crews along the appropriate transportation routes to the site be trained (Reed, James B. 1993. The Long and Winding Road to WIPP. *State Legislatures*, 19, 1 (January): 46).

**2. Low-level Nuclear Waste (LLNW) Storage** -- An attempt at finding volunteer municipalities and counties to site a low-level nuclear waste storage facility in Illinois failed after the Illinois Department of Nuclear Safety, having both advocacy and regulatory capacity over the process, was called into question for choosing a site on political rather than technical grounds. Opposition to the site selected led to the formation of an independent commission that reviewed the selection process and found the chosen site, Martinsville, wanting. The state is currently in the process of drawing up a new set of selection criteria and beginning the siting process from square one (Tarricone, Paul. 1994. The Politics of Nuclear-Waste Disposal. *Civil Engineering*, 64, 3 (March 31): 56).

**3. Fluoride in H<sub>2</sub>O** -- Controversy over the safety of water fluoridation in the 1960's led to broad scale public participation in decision making through local referenda. Over half of the more than 3,000 cities in the United States considering fluoridation rejected it, and over sixty percent of the 600 referenda on the issue were unsuccessful. Further more, those cities that held referenda negatively affected the likelihood that neighboring cities would adopt fluoridation project, even if the referendum in the initial city was successful (Crain, Robert L., *et al.* 1969. *The Politics of Community Conflict: The Fluoridation Decision*, (Indianapolis: The Bobbs-Merrill Company, Inc., esp. pp. 4; 25-28).

### **Insert I (cont.)**

**4. Shoreham** -- Characterized by the longest construction license hearings ever in the United States (both county and state governments refused to participate in the required emergency planning), the Shoreham Nuclear Power Plant, worth \$5.5 billion, was sold to the state of New York for \$1 so that the state could dismantle the plant (Joppke, Christian. 1992. The Politics of Nuclear Power: A History of Shoreham Nuclear Power Plant. *Contemporary Sociology*, 21, 1 (January): 120).

**5. Seabrook Station** -- Another "nuclear power blunder," Seabrook Station was initiated in 1972 by the public service company of New Hampshire and was unable to obtain an operating license until 1990, causing the public service company to declare bankruptcy. This case is marked as one where the citizens groups were disadvantaged relative to nuclear proponents who had far better resources to engage in the court and regulatory proceedings during the almost two decade struggle (Abbotts, John. 1991. New Hampshire's White Elephant: Seabrook Station: Citizen Politics and Nuclear Power. *The Bulletin of Atomic Scientists*, 47, 2 (March): 42).

**6. Biotechnology** -- A political battle between those who fear the risks of introducing genetically engineered species into the environment and those who fear a loss of competitive advantage to other countries with fewer regulatory constraints has left EPA, the Department of Agriculture (USDA), and the Food and Drug Administration (FDA) with insufficient guidelines for developing regulations appropriate to biotechnology. Biotech firms, fearing protests and lawsuits, are reluctant to proceed with their own experiments until regulatory guidelines are established ( Browning, Graeme. 1992. Biotech Politics. *National Journal*, 24, 9 (February, 29): 513).



government and industrial programs are recognized to harbor potentially severe negative effects that could last for many years. (Roughly seven work generations -- about 140 years -- is sometimes nominated as a useful symbolic referent.) At the same time, the demands to consider the long term effects of "large scale policy,"<sup>10</sup> and to provide assurances of damage limiting and mitigation capabilities are made within a political system that has developed quite fruitfully on the strikingly different assumptions of trial and error incrementalism,<sup>11</sup> and an economic system that strongly reinforces seeking short term gains.<sup>12</sup> It is a process that explicitly denies the need, indeed the rationality, of such long term commitments.

Current decision making. Incremental decision making (for the short haul) is posed as a rational alternative to comprehensive or fully integrated institutional decision making. It is taken not only as the realistic description of the way large organizations in the public and private sectors operate, but also as a desirable method within large organizations.<sup>13</sup> Incremental decision making assumes that small decision made over a period of time, that are refined as information about outcomes associated with each step becomes available, will provide adequate coverage of both varied interests and approaches to a policy area. The alternative -- comprehensive decision making -- demands that all values, priorities, alternatives, and outcomes are known and

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<sup>10</sup> P. R. Schulman. 1980. Large Scale Policy Making. New York: Elsevier.

<sup>11</sup> For discussions of incremental decision making, see, Etzioni, A. 1967. Mixed Scanning: A Third Approach to Decision Making. Public Administration Review. (December): 385-392. Charles E. Lindblom. 1959. The Science of Muddling Through. Public Administration Review. 19: 79-88; Charles E. Lindblom. 1965 The Intelligence of Democracy: Decision Making Through Partisan Mutual Adjustment. New York: Free Press, 1965; Steinbrenner, J. 1974. A Cybernetic Theory of Decision: New Dimensions of Political Analysis. Princeton: Princeton University Press. Aaron Wildavsky. 1964. The Politics of the Budgetary Process. Boston: Little, Brown.

<sup>12</sup> For a discussion of the relative time horizons considered in economic decision making in various countries, see, for example, Dore, Ron. 1993. What Makes the Japanese Different. in C. Crouch and D. Marquand, eds., Ethics and Markets. Oxford: Blackwell.

<sup>13</sup> Lindblom. 1965. op. cit.; Braybrooke, D. and C. E. Lindblom. 1963. A Strategy of Decision: Policy Evaluation as a Social Process. New York: Free Press of Glencoe; Cyert, R. M. and J. G. March. 1992, A Behavioral Theory of the Firm, 2d ed. Cambridge: Blackwell Business.

can be measured in advance such that the optimal solution can be found; a requirement so demanding it is unlikely to be met. Incrementalism, on the other hand, assumes that new information can be brought to bear on decisions as that information surfaces. Thus, pressure on decision makers to be all-knowledgeable is reduced. Because only small steps are taken, current conditions are altered slowly and stability is maintained, ideally keeping unforeseen consequences to a minimum.

In realizing that the comprehensive ideal is unattainable, incrementalism provides an alternate approach to decision problems under conditions of incomplete information and a broad field of varied and competing interests. This approach is well suited to market processes and the pluralist ideal in governmental decision making in the United States. The process is a rational one insofar as the decision making participants, assumed to be shifting over time, bring a sufficient pool of perspectives and solutions to bear on the decision such that a broad set of alternatives is considered.<sup>14</sup>

However, for incremental decision-making to be rational and sufficient, several assumptions about the decision domain must hold.<sup>15</sup> First, decision makers' values should be sufficiently commensurate with one another that the promise of a future win makes a loss in the near term acceptable. That is, if all players' values fall within some circumscribed limits, and losers will find outcomes acceptable if not optimal, the decision process is unlikely to break down. Second, decision outcomes can be known

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<sup>14</sup> The federal budget as a decision making subject provides an excellent example of an incremental decision making process. See A. Wildavsky. 1992. The New Politics of the Budgetary Process, 2d ed. New York: Harper Collins, for a detailed analysis of this process. Other examples of incremental decision making abound such that is the rule rather than the exception in governmental decision processes. Take, for instance, any agency's regulatory rule making process where the agency proposes a rule, accepts and responds to comments on the proposal, makes a final decision about the rule to be instated, and invariably waits for litigation about the application of that rule across various cases. The litigation process, based on incoming information, refines the rule over an indefinite time period. For a discussion of this process, see, P. Woll. 1977. American Bureaucracy, 2d ed. New York: Norton. esp. pp. 76-154.

<sup>15</sup> For a discussion of this rationale, see especially, Lindbloom. 1965. op cit.

in sufficient time to adjust for mistakes or for unforeseen consequences. And, third, it should be unlikely that an aspect of the solutions will be consistently overlooked as decisions are made and remade, and there should be constantly shifting patterns of participants and information, which would provide a more realistic means of achieving the coverage implied by synoptic, comprehensive decision making.<sup>16</sup>

While the rationality of incremental decision making is hard to dispute for many decision making domains, decisions made under uncertainty where the risks, however improbable, may have catastrophic consequences rob incremental decision making of many of its optimistic assumptions. First, decisions with potentially disastrous future consequences are among the most politically intractable decisions today where value conflicts repeatedly bring the decision process to its knees. (See examples 2, 4 and 5, Insert I) Without some agreement that decision outcomes will fall within an acceptable range of options, the prospect of future refinement of current decisions is less reassuring and increases the current stakes for interested parties.<sup>17</sup> Thus the conflict associated with decisions that suggest a hazardous future undermines the logic that allows for an ambling and iterated decision process.

Second, the notion that information to guide decision makers will re-enter the system in a timely fashion does not apply for many decisions within the hazardous-future domain. The outcomes of decisions made about energy or resource use in 1994, for example, will not be obvious for tens or perhaps hundreds of years. At which time, even significant incremental adjustments may not be an appropriate option. (Examples 3 and 6 in Table I demonstrate political decision processes that are hampered by fear of

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<sup>16</sup> See, C. E. Lindblom. 1959. op. cit.; Simon, Herbert A. 1947. Administrative Behavior: A Study of Decision Making Processes in Administrative Organizations. New York: Macmillan; and March, J. G. and H. A. Simon. 1958. Organizations. New York: John Wiley.

<sup>17</sup> For example, Wildavsky argues that changes made during the 1980's in the budgetary process were brought about, in part, by a breakdown in consensus that undermined the incremental decision process: Wildavsky, op cit.

future, irreversible surprises.) When information about decision making outcomes becomes available only well after the decision is actually made, it calls into question more than the rationality of incremental decision making. The notion of political or corporate accountability also crumbles when decision outcomes are known only in the politically or economically distant future. For example, decision makers are not bound by reelection pressures to make energy use decisions today that will be "wise" in terms of the needs of the citizenry of that future.<sup>18</sup>

Finally, decisions in the hazardous-future domain raise the problem of whether the incremental process can lead to optimal decisions. The risks involved are such that a sub-optimal, compromise decision may be unacceptable. The incremental decision process promises only workable solutions based on a trial and error learning process. But if it can be imagined that the consequences of some errors are so grievous that there may be no further trials -- "your next error may be your last trial" -- there seems very little room for error.<sup>19</sup>

If the incremental decision making model is inappropriate when considering questions about nuclear waste storage, biotechnology use, resource extraction or a host of others, we are somewhat at a loss for credible models of how decisions concerning such issues should be made. Furthermore, we face the question of whether decision making models more appropriate for the hazardous-future domain will be compatible with the institutional structure in place. The decision time frames and short incentive cycles members of Congress, for example, must consider provide an initial indication of the potential misfit between specific, long-term problems and the institutional structure in place to deal with them.

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<sup>18</sup> For a discussion of the role of re-election in shaping the actions of members of Congress, see, D. R. Mayhew. 1974. Congress: The Electoral Connection, New Haven: Yale University Press.

<sup>19</sup> See La Porte and Consolini. 1991. *op.cit.*

It is not surprising, then, that there is often skepticism about proposals for large programs in the pursuit of short-term benefits when a program harbors sufficient hazard that their proponents also promise safe, beneficial management over the long term. Such is the case, for example, in the production, use, and/or regulation of hazardous materials. Such proposals are increasingly met with doubts about the ability or willingness of agencies and industries both to garner short term benefits and do so safely with an eye toward the protection of the far future. Given current economic and institutional incentives, there seems little to encourage future decision makers to hold to the resolve --- or perhaps the commitments -- of present leaders or operating managers.

Without a much better understanding of the conditions which improve, indeed assure, institutional constancy, there is no reason to expect much improvement in the skepticism of the public in the management of high hazard programs or to expect less resistance to the deployment of new ones. We turn to this problem now discussing, first, the concept's meaning, then the conditions that increase the demands for institutional constancy, and the conditions which might result in it.

### Considering the Concept.

Institutional constancy<sup>20</sup> refers primarily to faithfulness, unchanging commitment to, and repeated attainment of performance, effects, or outcomes in accord with agreements by agents of an institution made at one time as expressed or experienced in a future time. It would include assuring continued or improved performance in the spirit of the original agreement as new information, technology, or changed conditions developed.

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<sup>20</sup> Constancy is defined as "unchanging, repeated, faithful," 1992. New York Times Dictionary. New York: Times Books.

An institution exhibits constancy when, year after year, it achieves outcomes it agreed in the past to pursue. For example, FAA's air traffic control operations, together with air carriers, have consistently achieved high level of flight safety and traffic coordination in commercial aviation; the nuclear navy has consistently achieved high levels of safety aboard nuclear submarines; and electrical utilities have achieved remarkably high levels of availability of electrical power. Great universities exhibit constancy in commitments to intellectual excellence generation after generation through producing very skilled undergraduates and professionals as well as path breaking research.

For institutional leaders to assure the public that their successors will continue to be faithful to commitments and consistent in performance, the organization must exhibit characteristics and qualities that demonstrates willingness and capability to do so into the indefinite future. If it has had a long history of demonstrated commitment, and capacity for repeatedly high performance even in the face of strong contrary pressures, its chances of winning or continuing public confidence is enhanced. If, however, it is a new program perhaps to be carried out by a newly established institution, e.g., the TVA in its early days, the combination of characteristics and establishing conditions are likely to require more rigor and be more extensive. The extreme case is for an institution, like the U.S. Department of Energy (DOE), whose history has earned it a reputation for inconstancy, compromise, and weakened capacity

(and sometime arrogance).<sup>21</sup> In this situation, the possibility of countering skepticism is slim and the costs of doing so may be great.

The challenge to attain constancy of institutional behavior over many generations is extraordinary in terms of a) our limited analytical ability to predict the outcomes of institutional activities for those periods, b) the present means to re-enforce or reward generations of consistent behavior, and, as importantly, c) the knowledge needed to design institutional relationships that improve rather than degrade the quality of future action that is faithful to the spirit of present commitments and agreements.

Interest in assuring constancy of institutional behavior beyond the next several legislative terms or corporate earning periods is rare. Attention is usually focussed on getting agencies or firms to comply with immediate political and public wishes for changes in shorter term behavior by employing political agreements, legislation, executive orders, regulations and contracts. But all of these devices also have elements that permit change, allow for cancellation, and sometimes give wiggle room for delay and avoidance of commitments. Indeed, there is much to warrant rules that do not overly constrain the future. Who knows what strange contingencies will arise? Aren't other words for institutional constancy, bureaucratic inertia? In one case, we want consistent adherence to our wishes, in the other, we rail against stubborn refusal to change to what we wish.<sup>22</sup>

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<sup>21</sup> For an example of the problems associated with a lack of public trust in DOE, see, Slovic, P., *et al.* 1991. Perceived Risk, Trust, and the Politics of Nuclear Waste. Science, 254, (December 13): 1603-1607. A more general comment on public perceptions of governmental agencies comes from an Office of Technology Assessment (OTA) commissioned poll, "When pollsters...asked 1,273 respondents whom they would believe if a federal agency said a product was safe and an environmental group said the product was unsafe, 63 percent chose the environmental group. The finding rattled bureaucrats who once considered themselves the repositories of public trust." Browning, G. 1992. Biotech Politics. National Journal, 24, 9, (February 29): 513. Certainly the private sector has experienced a similar loss of public confidence. For a discussion of some cases in the private sector, see, for example, R. Mokhiber. 1988. Corporate Crime and Violence: Big Business Power and the Abuse of the Public Trust. San Francisco: Sierra Club Books.

<sup>22</sup> We make a distinction between constancy and inertia: the first is keeping faith with commitments and goals, the second names the problem of refusal to change ways of doing things that are no longer judged appropriate in meeting firm commitments and goals. For discussions about public organizations and lack of change, see, J.H. Knott and G.G. Miller. 1987. Reforming Bureaucracy: The Politics of Institutional Choice. Englewood Cliffs, NJ: Prentice-Hall, esp. 167-69; and J. Q. Wilson. 1989.

In the absence of a well developed literature on the conditions of institutional constancy (or anything that is remotely similar), we propose a framework for considering it.<sup>23</sup> What conditions increase the demand or need for institutional constancy? What conditions or circumstances make it difficult to attain, to maintain, or, most importantly, to recover? What conditions, if they were exhibited by an institution and characterized its political surround, would lead both to confident perceptions of likely future constancy and actual securing it?

### Demands for Constancy.

Interest in institutional constancy grows when institutions are perceived to engage in activities that are likely to have significant, possibly irreversible effects on

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Bureaucracy: What Government Agencies Do and Why They Do It. New York: Basic Books. esp. 317-25. For more detailed analyses of "inertia," see, M. T. Hannan and J. Freeman. 1989. Organizational Ecology. Cambridge: Harvard University Press; H. Kaufman. 1975. The Natural History of Human Organizations, Administration and Society, 7, (August): 131-149; and A. Stinchcombe. 1965. Social Structure and Organizations, in J.G. March, ed. Handbook of Organizations. Chicago: Rand McNally.

<sup>23</sup> The question of institutional constancy is only sparsely addressed in a variety of literatures. In the organization theory literature, organizational survival is considered, yet the time frame of survival is typically well within a century [C. I. Barnard. 1938. The Functions of the Executive. Cambridge: Harvard University Press; and Hannan and Freeman. op. cit.]. The notion of carrying out an organizational mission for numerous generations is notably absent. While some literatures consider "inertia" in organizations, this is usually viewed in terms of an inhibition to responsiveness or innovation, as in Wilson's discussion of the difficulties political appointees face in directing the agencies they oversee [J. Q. Wilson. 1989. op. cit.]. There are some exceptions where "stability" rather than "inertia" is explored along with the issue of maintenance of an organizational "mission," for example, Thompson's notion of protecting an organization's technical core [J. D. Thompson. 1967. Organizations in Action. New York: McGraw-Hill]. However, the question of a multi-generation time frame is not posed. From the collective action, Elinor Ostrom (1990) highlights "the problem of credible commitment" – a reasonably close conceptual cousin – but there is little discussion the conditions that produce might produce it across several generations [Governing the Commons: The Evolution of Institutions for Collective Action. New York: Cambridge University Press]. The literature on socialization processes may be applicable in that the notion of carrying out a set of norms over time is often implicit. For example, many studies have attempted to determine which socialization processes are most crucial and enduring in contributing to partisan preferences [P. A. Beck and M. K. Jennings. 1991. Family Traditions, Political Periods, and the Development of Partisan Orientations. Journal of Politics, 53,3 (August): 742-63]. Yet much of the focus of the literature is on the transference of norms from an organization or group to its new members. Whether or not the process itself entails changes in or an evolution of the norms is not addressed given that consensus on a set of norms, not absolute constancy of those norms, is the most crucial point [K. Meier. 1975. Representative Bureaucracy. American Political Science Review, 69, 2: 526-42; K. Meier and L. Nigro. 1976. Representative Bureaucracy and Political Preferences. Public Administration Review, 34, 4: 458-69]. Another literature that is sometimes directed toward constancy as presented here is that of professionalization. Some undertakings in the literature address specifically the issue of carrying out a set of norms over time [I. Eli, *et al.* 1989. Dentists and Dentistry: Attitude Changes Toward the Chosen Profession. Human Relations, 41, 12 (December): 929-37]. However, for much of the professionalization literature, sustaining the content of a specific set of norms is less central than the use of norms as a justification for or legitimation of autonomy [M. S. Larson. 1977. The Rise of Professionalism: A Sociological Analysis. Berkeley: University of California Press]. Finally, there is the growing literature on inter-generational equity. However, this literature is mainly concerned with finding an ethic to be institutionalized [Jonas, Hans. 1984. The Imperative of Responsibility: In Search of an Ethic for Technological Age. Chicago: The University of Chicago Press]. The process of institutionalization or the ability to communicate to stakeholders in the present that an appropriate ethic could be sustained institutionally over several generations is not taken up.



future generations. In the usual situation of incremental decision making, agreements are made with the tacit understanding that those decisions are mutable and subject to future adjustment as new participants and new information enter the decision making arena. Such agreements are appropriate for a majority of institutions where success in the short term can be ascertained unambiguously. There are a number of organizations that confront high-hazard situations that are not inter-generational in character, for example, the Federal Aviation Administration, where agency safety performance can be clearly evaluated on a yearly basis. Accountability to stakeholders is meaningful.

For one type of public decisions, however, -- those dealing with a hazardous future -- the prospect of agreements being altered by future actors is disconcerting and potentially disruptive to decision making. Three decision characteristics ensure that concerns about constancy will arise. Ignoring the implications of these qualities may become grounds for challenging the current decision making practices themselves. The first is the perception that large scale effects or outcomes may occur across broad spatial and temporal spans. If these effects also loom as potentially irreversible, the situation is intensified.<sup>24</sup> Secondly, when these effects are also seen as hazardous, demands for constancy may arise even if the likelihood of failure is small and accompanied by substantial gains for the program's prime beneficiaries. Thirdly, if significant risks and their costs are likely to be borne by future generations, constancy will be demanded as a substitute for accountability.

Pressures on decision practices are likely to be particularly demanding when stakeholders believe or suspect that agreements made in the present to limit potential

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<sup>24</sup> For example, patterns of energy usage over the past century may have already altered the chemistry of the Earth's atmosphere sufficiently to affect a 2° C increase in average global temperature. Though this increase is quantitatively small, it is sufficient to dramatically alter regional climates and ecosystems. For a discussion of the current state of scientific understanding of this problem, see, J.T. Houghton, *et al*, ed. 1990. Intergovernmental Panel on Climate Change: The ICC Scientific Assessment. Cambridge, Cambridge University Press; and J.T. Houghton, *et al*, eds, 1992. Climate Change 1992: The Supplementary Report to the ICC Scientific Assessment. Cambridge: Cambridge University Press.

harm may be compromised, denied or abrogated in the future with little penalty to those responsible. A history of broken promises, cover-ups, unwarranted use of political, economic or technical power greatly increases the likelihood that interested publics will demand means to assure constancy before agreements are made -- indeed as a condition for reaching them at all.

The realization that future generations may bear the costs of decisions made in the present raises a confounding ethical dilemma.<sup>25</sup> What is a just manner in which to distribute costs and benefits across generations? Should current populations endure costs today so that future populations will not have to? Uncertainty about the knowledge and technological capacity of future generations exacerbates the problem. An optimistic view assumes that difficult problems of today will be more easily solved by future generations.<sup>26</sup> The uncertainty of this view, however, makes it unsound as an ethical basis for informing decision making strategies regarding inter-generational effects. An inherent part of assuring constancy would be an agreed upon ethic of how costs and benefits should be distributed across generations. This is especially true when decision outcomes extend far out into the future, for it demands that generation after generation respond to new information and changing value structures in coping with long-term effects. It may be that constancy will be elusive until an ethic acceptable to a variety of stakeholders can be found. If such acceptance becomes

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<sup>25</sup> See, for example, Green, Ronald M. 1980. Intergenerational Distributive Justice and Environmental Responsibility. in Ernest DeAlton Partridge, ed., Responsibilities to Future Generations: Environmental Ethics, Buffalo: Prometheus Books; Howarth, Richard. 1991. Intergenerational Competitive Equilibria Under Technological Uncertainty and an Exhaustible Resource Constraint. Journal of Environmental Economics and Management, 21: 225-243; Jonas, Hans. 1984. op. cit.; Norton, Bryan. 1982. Environmental Ethics and the Rights of Future Generations. Environmental Ethics, Winter : 319-338; and Wenz, Peter. 1983. Ethics, Energy Policy, and Future Generations. Environmental Ethics, 5: 195-209.

<sup>26</sup> This assumption is implicit in the debate concerning whether temporary storage is a better option for nuclear waste than a final repository. For a discussion of how responsibility should be divided between generations that accounts for changes in knowledge, see, W. Halfele. 1990. Energy from Nuclear Power. Scientific American. 263, 3 (September): 136-144; and C. Perrings. 1991. Reserved Rationality and the Precautionary Principle: Technological Change, Time and Uncertainty in Environmental Decision Making. in R. Costanza, ed. , Ecological Economics: The Science and Management of Sustainability. New York: Columbia University Press.

crucial, it is particularly troublesome for it can be argued that all forms of received wisdom concerning such ethics fall substantially short in meeting our needs.<sup>27</sup>

Barriers to Improvement. Policy domains vary in the degree to which institutional constancy can be won, maintained or recovered. Three factors make it particularly difficult: first, when the industrial sector of the domain faces a weakened economy, especially if there is the potential for economic deprivation, for this fosters the suspicion of under investment in safe practices; second, when electoral and political incentives favor short term benefits and programs over long term ones; and third, when there is a relatively high degree of heterogeneity in the society, especially when this prompts a variety of interests in the society.

Each of these factors contributes to conditions which subject existing institutions to pressures for short term compromise and opportunistic behavior, the concentration of existing resources to address immediate interests, and perception that commitments to the future may be discounted. The more the domains are characterized by these factors, the more difficult it will be to demonstrate institutional constancy, and the more likely even mild public suspicion will fuel public distrust. Thus, the more the institutions are confronted with the need to maintain institutional constancy, the more effort must be devoted to establishing the conditions which assure the public that future leaders will keep commitments. If, in addition, the agencies and industrial organizations in question have histories of compromise, inconstancy, sifting of priorities, and especially dissembly and deception in dealing with potentially affected groups, the likelihood of maintaining or recovering the public's confidence in the agencies' commitments to institutional constancy will erode quickly.

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<sup>27</sup> See especially, Jonas, Hans. 1984. op. cit.; and the reports of the Panel on Fairness Between Generations, National Academy of Public Administration. 1994 and 1995.

### Conditions for Improvement.

Incentives to improve conditions which could assure constancy of institutional behavior across a number of generations are scant and so has been interest in providing analysis which could inform institutional and administrative design. Indeed there is almost nothing insightful in the literature about increasing institutional inertia or constancy. It is still an analytical puzzle. We turn to it now, indicating a general analytical direction.

Attaining institutional constancy involves two closely related matters. The first has to do with conditions which encourage the public or its major opinion leaders to perceive that an agency, public contractor or firm can be trusted to keep its word -- to be steadfast -- for a very long time into the future. The second, less evident matter concerns the capacity of an agency or institution actually to enact programs that are faithful to the original spirit of its commitments. While these two qualities are closely related, one can imagine succeeding at one without achieving the other. An agency or firm might be able to persuade the public that it was firmly committed to certain objectives but actually turns out to be in no position to realize them. Contrariwise, an agency or firm could be very well situated, motivated, and structured to carry out its commitments for years to come, but be unable to convince the public of its steadfastness.

Both the conditions of perceived steadfastness and the capacity to meet commitments should exist for institutional constancy to be realized. The first set of conditions speaks to the assurance of continued political and institutional will, steadfastness in "keeping the faith", the second speaks to the organizational infrastructure of institutional constancy to the capacity to follow through for many years. Public assurances that the "faith will be kept" for multiple generations -- even in the face of stiff opposition -- requires that conditions persist which re-enforce initial

motivations and consequent agreements. A key factor animating these conditions is a strong emphasis on the importance of trusteeship and stewardship in the interests of future generations.<sup>28</sup> This is signalled by:

- \* The necessary formal, usually written goal of unswerving adherence to the spirit of the initial agreement or commitment;

- \* Strong evidence of institutional norms that nurture the resolve to persist across many work generations, including in the public sector binding elements in labor contracts that extend over several political generations;<sup>29</sup>

- \* Strong institutional norms articulated by high status figures within an agency or firm calling especially on professional staff and key labor representatives to emphasize the importance of constancy, perhaps tradition as seen, for example, in the U.S. Marine Corp or Swiss banks;

- \* Vigorous external re-enforcement from both regulatory agencies and "public watching" groups to assure that the institutions involved will not flag in attending to performance requirements. These should include the support of outside groups both in terms of regular involvement in advising roles and resources to foster their expectations and demands for consultation if the next generation of leaders flags in their resolve, and in the public sector interagency coalitions formalized via interagency agreements. Optimunly, these measures should lead to laws, formal expectation, foundation/non-governmental organization (NGO) funding and infrastructure for continual encouragement and sanctions for "keeping the faith."

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<sup>28</sup> See, for example, Griffith, William. 1994. Protecting and Providing for Future Generations: The Present Generation as Trustee. Deciding for the Future: Issue Papers, Washington, D.C: National Academy of Public Administration.

<sup>29</sup> We thank Richard Tobias for his insights into the uses of labor contracts as a way of assuring the constancy of executive behavior across several generations of politically appointed public executives. (Recall that the average time senior level appointees remain "in post" is about eighteen months.)

While strong motivation and earnestness are necessary, they do not carry the day. Other conditions should also be present to enable actions to be carried out in realizing importance commitments. These include:

- \* Administrative and technical capability and infrastructure needed to carry out activities that assure performance along with agency/firm rewards for articulating and pursuing measures that enhance constancy and intergenerational fairness. These should include executive socialization and training processes to reenforce commitment and perspectives;

- \* Analytical supports to decision making (including highly skilled professionals) that represent the interests of the future and enable work, such as "future impact analyses," that attempts to clarify the effects of present action on future experience; and

- \* Perhaps most important, evident and effective capacity to detect and remedy the early on-set of likely failures related to the activities that threaten the future and the assurance of remediation resources in the event failures should occur.<sup>30</sup>

#### Variations in Program Status and the Pursuit of Institutional Constancy.

Proposals for improving institutional constancy must anticipate being applied to policy domains that vary considerably in their history of beneficiaries and "victims",<sup>31</sup> the explicit expectations of initial policy effects, and the quality of predictive knowledge available at the time of the initial commitments.<sup>32</sup> We briefly outline three

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<sup>30</sup> See for example La Porte, Todd R. and Craig Thomas. 1994. Regulatory Compliance and the Ethos of Quality Enhancement: Surprises in Nuclear Power Plant Operations. Journal of Public Administration Research and Theory. 5, 4 (December): 250-295.

<sup>31</sup> See Charles Perrow's treatment in, 1984. Normal Accidents: Living with High-Risk Technologies, New York: Basic Books.

<sup>32</sup> The degree of certainty about future effects, e.g., the certainty of promise or loss, the specificity of winner and losers, scale of effects, and their potential reversibility all matter a good deal and raise a host of additional analytical and operational questions. The limits of this paper do not allow us to go more deeply into their importance.

substantially different situations (illustrated in Figure II) which vary significantly in terms of past or current benefits and the expected or perceived distribution of risk for different future generations. Types of institutional constancy situations can vary as a function of the perceived benefit/risk profiles in the present ( $T_1$ ), in the mid-generations of system operations ( $T_2$ ), and later in the system's mature stages ( $T_3$ ). The preferred, wished for situation (type A, Figure II), usually claimed by early promoters, is one in which each generation will experience about the same level of high to moderate benefits as against costs. If this turns out actually to be the case, as for example in a number of manufacturing areas, there is likely to be little subsequent worry about institutional constancy. Other situations (types B, C and D) are not so simple, they represent the unintended, but familiar, institutional constancy anomalies.

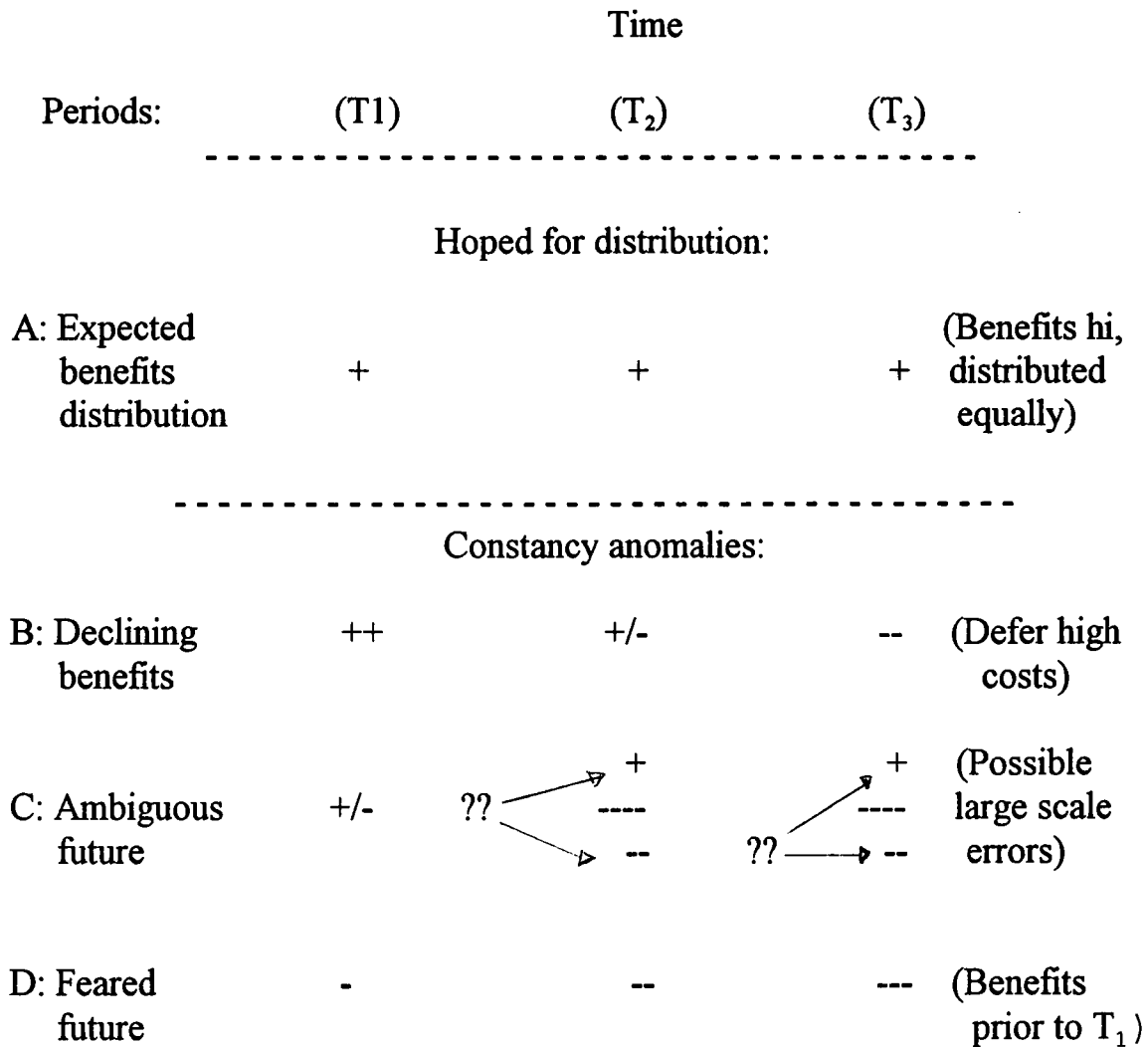
Type B, Declining Benefits, for example, suggests a situation, perhaps similar to those addressed in the literature of "discounting rates," where there are initial expectations of considerable benefits (over costs) in the present.<sup>33</sup> But there is also suspicion that benefits will decline, with increasing costs, perhaps in the form of environmental or health related harms, which increase more rapidly than calculated by program proponents. Worries crop up that future generations will have to bear significantly more costs than is warranted unless present benefits are allocated now and in the near future to assure that the resources and capabilities will be available to remedy harms when or in the event they may be discovered in the future. Some aspects of environmental monitoring and natural resource development come to mind here.<sup>34</sup>

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<sup>33</sup> Catron, B., L. Boyer, J. Hartung, and J. Grund. 1993. Ethical Dimensions of Environmental Policy Making: Risk Management, Intergenerational Equity, and Discounting, Washington, DC: National Academy of Public Administration, esp. pp. 54-67.

<sup>34</sup> Monitoring efforts for deep mining sites must be carried out for a considerable number of years as environmental impacts persist even after mine closure. See, for example, Dalyell, Tam. 1994. More Trouble Down the Pits. New Scientist. 142, 1922. (April 23): 48. Monitoring efforts are even becoming a concern for surface mining in that land restoration processes can extend

**Figure II.**  
**Types of Benefit/Risk Distributions.**




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more than ten years past mine closure. See Gillis, Anna Maria. 1991. Bringing Back the Land. *Bioscience*. 41, 2 (February): 68-71. Nollin, Jan. 1993. Communicating with the Future: Implications for Nuclear Waste Disposal. *Futures*. 25, 7 (September): 778.



A more tangled and contentious case of Ambiguous Futures (Type C) are programs that involve the potentials of substantial benefits, especially for some groups or institutions in the society, but even at the outset, there is ambiguity about the potential for also incurring increasing damage to other interests or groups, and to later generations as well, say due to the character of the technology or cultural changes implied. In these cases, e.g., as in the early story of U.S. commercial nuclear energy, and current genetic engineering efforts, the prospects are ambiguous, knowledge bases limited, and future effects dependent strongly on the behavior of governmental regulatory institutions and industrial interests. We would expect considerable competition to promote the program in pursuit of short terms benefits and profits, say, with an accompanying increase in conflict about its potential effects and a growing worry that public regulatory institutions would not be able to exhibit constancy in their roles in protecting the public's long term interest.

The last type D, facing a Feared Future, represents programs and activities where the major share of benefits have already been experienced by past and present generations, but for which this and succeeding generations must now absorb the costs, perhaps in disruptive health problems, severe environmental damage, and social dislocation. Environmental Superfunds programs and, to a more limited extent, radioactive waste management qualify here.<sup>35</sup> That is, unless this and succeeding generations act soon, with some vigor, the degree of social or environmental harm will increase. One major source of conflict is likely to surround controversy over just how much harm could be expected and who the victims might be, though there is little dispute that harm can occur. Worries mount that unless the remedial institutions of the

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<sup>35</sup> 42 U.S.C. Sections 9601-9657. For a discussion of how equity is being considered under the law, see, Carlson, J. L. and C. W. Bausell. 1987. Financing Superfund: An Evaluation of Alternative Tax Mechanisms. *Natural Resources Journal*. 27, 1 (Winter): 103-122.

society demonstrate remarkable constancy (in that few people now or in the near future are likely to experience positive benefits) that future generations will surely confront grave, perhaps fearful, consequences.

The variations or types just discussed suggest potentially strong differences in the substance and dynamics of institutional constancy across the time periods ( $T_{1,3}$ ). For purposes of this essay, we argue that significant variations are likely in terms of:

- \* The socio-technical systems that produce the benefits and hazards. Each of these has a specific set of professional, industrial, and government institutions with a particular history and standing in the society.

- \* The types of knowledge necessary to address institutional constancy questions. These stem from the particular types of benefits and hazards associated with the system in question, e.g., the behavior of radioactive wastes as they interact with different geological media, and pose different levels of factual uncertainty regarding the likelihood and severity of harm.

- \* The emphasis on different legal factors, political attitudes, and economic or fiscal demands. These also stem from the particular hazards of the systems in question, and the histories of the institutions already involved. That is, different hazards are addressed by various laws and litigation histories, and some industries and agencies have better records in dealing with past constancy deficits than others. And clearly the economic strength of the industries in some areas of future hazard are more advantaged than others.

It follows that each of these cases is likely to require somewhat different institutional changes if agency or firm leaders seriously seek to develop a climate and reality of assured constancy.

### Next Steps and Key Questions.

It is too soon to nominate specific recommendations with confidence. We conclude, therefore, by nominating for a next analytical step and then pose several central questions for a more detailed agenda.

In the nearly complete absence of systematic study, a better basis for analysis is imperative. An important analytical next step would be to examine, via case studies, the characteristics and experience of institutions that have evolved in different ways in search of insight regarding the requisites, costs and possibilities of increasing institutional capacities for constancy. Cases could be worked up for institutions that: continue effectively to "keep the faith", e.g., U.S. Marines or other military institutions, selected institutions of higher education, and Swiss banks; have established programs embodied in a new agency that "may keep the faith", e.g., NASA, air traffic control, water resource development, and TVA; and have transformed situations of inconstancy that honor change and flexibility, adaptation to economic/political interests, and limited steadfastness into ones that exhibit greatly increased faithfulness. At this writing, examples of the latter category do not spring to mind.

Finally, we pose several central questions regarding institutional constancy within our current political system. They frame a study agenda both extensive and crucial.

1. How many of the changes necessary to attain institutional constancy can be accommodated within our existing legal/social system? How would such changes be affected by the different cost-benefit distributions we outlined above? It seems likely that a good number of changes will be needed if the present generation seriously wishes to take the future into account. It is not likely that simply continuing the status quo will suffice. We have argued that the present incremental, trial and error system,

effective and fruitful in the past, does not on its face assume the sorts of problems we are discussing here. Thus, a careful consideration of constancy enhancing conditions in light of our existing legal system is crucial. It can be argued that we face a growing number of areas that raise problems of effects across a number of generations. As these mount, it appears to add pressure on American political institutions just at a time they are already bearing increasing demands.<sup>36</sup>

2. If changes to enhance constancy are too numerous and cross-wise with our existing pattern of law, how much change within our legal system would be needed to accomplish institutional constancy for different types of benefit/cost distributions? Are some changes likely to be less disruptive than others?

3. A last question is the most troubling. Is it possible that, within our present constitutional framework, there is a class of policy areas for which a high degree of institutional constancy is necessary but it cannot be accomplished? Are there domains that would require changes only "constitutional reform" would allow so that institutional constancy can be attained, or recovered? This would be a most unexpected legacy of large technical systems and our emerging political culture.<sup>37</sup>

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<sup>36</sup> See, Dahl, R. 1994. The New American Political (Dis)Order. Berkeley: Institute of Governmental Studies Press.

<sup>37</sup> After the analyses sought here is underway, one should re-visit the possibilities for reducing the intensity of pressures that result in increased demands for institutional constancy.

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