

Innovation in Policy Analysis

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Executive Summary

This paper assesses research needs in the area of innovation in policy analysis. The paper examines the existing literature and theory regarding innovation in three interrelated fields of policy analysis. These include public policy, public management, and organization theory. Research gaps in the literature will be discussed. Research needs will be highlighted. The literature on innovation is extensive. This paper will cover important aspects of three related fields to show linkages among them, and propose areas for continuing research. Along the way, relevant theories, hypotheses, concepts, methods, and variables will be addressed. The general answer to the question of "What is needed?" is the development of a typology and model for studying innovation, especially in large organizations. This paper provides exploratory research for filling that need.

I. Introduction.

Research and writing on the subject of innovation has generated an extensive literature. Most of the writing is intended for multidisciplinary audiences. Political scientists use lessons from business innovation to apply to government organizations and policy. Organization theorists look to biology and sociology for metaphors to explain concepts such as change and adaptation. Given the popularity of the subject and the wide range of research contexts, the subject of innovation defies attempts to establish ownership by any one field or even subfield. While recognizing the linkages and broad utility of concepts regarding innovation, some typology is useful for analytical purposes. Below are categories to place the writing on innovation into rough categories to compare and contrast how innovation is discussed by a variety of authors.

II. The Literature on Innovation.

A. Public Policy.

In the field of public policy researchers tend to focus on government programs. Walker's early work on the diffusion of innovation is a clear example. He writes that "An innovation will be defined simply as a *program or policy which is new to the states* adopting it..." (Walker, 1969, 881, italics added). He focuses primarily on the diffusion of innovation. For Walker, the innovative program may be an "old" program or idea and may already be adopted in other states. The diffusion of innovation is an approach to research for studying the relative speed and spatial relations of innovative programs, not the invention or creative acts involved in innovation.

In contrast, O'Toole defines innovation as a process. He writes: "Innovation is the *process of altering an established practice or objective*." (O'Toole, 1997, 1, italics added). O'Toole attempts to narrow his focus by noting that new public initiatives must be significant. He also writes that innovation can result from identifying new objectives or designing new, or different, programs to achieve existing goals. Innovative programs are those patterns of activities to achieve new goals or improve programs to pursue new ones. O'Toole's article links public policy and public management. He addresses the implementation stage of policy making in a network setting. O'Toole is primarily interested on providing advice and prescriptions

for managing innovation in a network context for the purpose of influencing network behavior for the implementation of innovative programs.

Walker and O'Toole's articles define innovation as any significant attempt to change public policy. [Note: the difficulty in differentiating significant from other kinds of policy changes will be addressed later.] Roberts and King (hereafter, Roberts) also view innovation as a process. Their book provides a broader and more recent context for thinking about innovation.

Roberts is interested in researching the *transformation* of public policy. The book focuses on large-scale system changes. They differentiate between two kinds of change. First order change involves *incremental measures* (they cite Lindblom, Cobb and Elder, Ripley and Franklin). Second order change involves fundamental systemic discontinuity. Transformation involves jumps to new systems and is also referred to as root, radical, revolutionary, and paradigm change. Examples of second order change include the development of British and Swedish welfare states; mid-1970s US clean air legislation; tobacco regulation; and airline deregulation. Roberts literature review covers previous theorists' attempts to explain radical change—as policy designs of political actors deliberately framing radical new public programs (by chance windows of opportunity—Kingdon; by learning—Sabatier and Smith; and by consensus—Coyle and Wildavsky). Roberts offers an innovative process to guide research on radical change.

For Roberts and King, innovation is one major part of the process of transformation— or "creating an irreversible transformation based on a new set of ordering principles" (Roberts and King, xii). Their innovation process includes the following stages:

Phase (1)

Creation: an emerging innovative idea; associated with a need, problem or concern; policy initiation, or defining the problem and proposing a solution.

Phase (2)

Design: placing the idea into a concrete form, a paper, prototype, or model.

Phase (3)

Implementation: putting the idea into practice; or incorporation, routinization, and diffusion of an idea.

Note the utility of Roberts's holistic innovation process model. Walker and O'Toole are focused on research into the policy implementation or agenda-setting phases only. Roberts also provides a typology for examining the role of policy entrepreneurship. The author also provides a typology of innovative entrepreneurs as individuals and teams that bring forth new ideas, mobilize resources, and move the idea through the political process. In short, in Roberts's holistic view, research must look to the interaction of the entrepreneurs during each stage in the process of innovation.

Roberts provides two interrelated models for the role(s) of individuals and teams in the policy innovation process. (Roberts, 12, 14) Her model of roles includes five categories: system maintainer; policy intellectual; policy advocate; failed entrepreneur; and public entrepreneur. Each phase of the innovation process requires different contributions from each participant. For phase 1--in creating new ideas--the policy intellectuals, policy advocates, and policy entrepreneurs are in the forefront. For phase 2--the design and prototype development phase--advocates, entrepreneurs and champions, are most important.

Finally, for phase 3--the implementation phase--policy entrepreneurs, champions and administrators take the lead in the innovation process.

Roberts' method uses a single, in-depth, case study examining public school choice in Minnesota. The analysis included research during a policy cycle that took 5 years from initiation to implementation. They interviewed the key actors and stakeholders in the policy debates, including the state governor, legislators, and educators, along with advocacy and interest groups. One of their key findings agrees with Stone in that policy problems are socially constructed. (Roberts, 188) In their case study, policy entrepreneurs and intellectuals play a most important role in managing meaning and shaping the problem definition. In effect, their interpretations provide an appropriate context linking problems and solutions.

Another key finding is the problems of political dynamics. They connect the barriers to radical policy change with their process phases. During policy initiation the political debate will center on values. (See also Polsby 1984) At the time of design and implementation they found "explosive" issues resulting in the interaction of power and politics in the formal legislative process. During design and implementation it was necessary for policy champions to arise, such as the governor. Conflict and consensus building must be managed—there must be coordination among the idea generators, designers, implementers and evaluators for a radical idea to survive to become a full-blown innovation. (Roberts, 198)

The authors also conducted research using psychometric instruments (Myers-Briggs Type Indicator, and Loevinger Sentence Completion Test, see 140, Table 6.1 Results) to test entrepreneurial personality traits. In general terms, they found that change agents in their case were intuitive, individualistic, and analytical. Change agents excelled at critical thinking and problem solving. They found that these traits are learned and innate. Expertise can be acquired through the study of their process model and developing current knowledge and skills.

While acknowledging the roles played by individuals as intellectuals, champions, and entrepreneurs, Roberts and King, also note the growing importance of teams and collective entrepreneurship. Given the length of the policy cycle in their study, and the large numbers of individual and groups involved, they write of the "close of the age of heroic entrepreneurship and the beginning of the age of collective entrepreneurship." (Roberts, 162) They characterize entrepreneurial teams as learning and self-organizing systems. (See Senge 1990, Van de Ven 1986, and Morgan 1986) Also, they highlight Walker's writing (1969) on diffusion and the importance of a community resource base. Thus, because radical change includes risk and uncertainty, they suggest the need for large coalitions and extensive resources—and ecology of organizations that will provide seed money and political support for issue analysis and experimentation. (Roberts, 169-171)

These findings, or lessons learned, point towards a direction for future research needs. Roberts and King write that: "Given the complexity of innovation in government, we suspect that collective entrepreneurship is a more common phenomenon than individual entrepreneurship. This will be an important area for future research." (Roberts, 180) In their view collective talents of policy intellectuals, advocates, champions, and administrators are all required to create innovation in the policy system.

B. Public Management.

Harvard University appears to be a leader in the field of public management and innovation in government. Since 1986, the Ford Foundation-JFK School of Government's "Innovations in American Government" awards program has recognized "exemplary achievements in government problem-solving

and to amplify the voices of public innovators in communicating their practices."

[<http://www.harvard.edu/intro.htm>] They classify innovative programs as those demonstrating "the art of creative problem-solving in the public sector." The development, execution, and evaluation of the innovative programs, especially at the state and local levels, have sparked research and writing on innovations in public management.

Altshuler and Behn's book on *Innovation in American Government* includes essays by public management scholars involved in the program. Their authors write on the state of current research on innovation. They highlight the difficulties in arriving at a definition of innovation, as well as the dilemmas facing public managers who are being pressured to change, improve and reinvent government – by being innovative.

Definitions of innovation cover a wide range depending on the author. Zegans' defines innovation narrowly. In his view, innovation is a new idea put into practice. Lynn views innovation as involving "significant" change. In Lynn's words, innovation is a fundamental transformation of an organization's core tasks: "Innovation changes deep structures and changes them permanently." (Altshuler & Behn, 7) Moore focuses on the ends of innovative programs, or the values that they reflect. Altshuler and Behn do not attempt to synthesize these contrasting definitions or attempt to categorize types of change, such as Roberts' distinction between first and second order change.

Altshuler and Behn also do not provide a single model for the innovation process. Instead they offer dilemmas, an approach similar to Stone's paradoxes. A long list of the innovation dilemmas facing public managers are summarized as follows (Altshuler and Behn, 9-36).

Accountability Dilemmas: Who is responsible?

1. Authorization Dilemma:

- Overcoming Wilsonian dichotomy (as practiced) without turning public servants into "outlaws."
- Use of citizen participation to legitimize innovation?
- Failure Dilemma:
- Innovation requires risks and failure.
- Political leaders seek benefits of innovation without the cost of failures.
- Customer Dilemma:
- Customer relationship of staff and line agencies: re-examine traditional control and service functions.

2. Paradigm Dilemmas: Cognitive Architecture?

- Routinization Dilemma:
- Conflict of old (honesty, fairness, efficiency) and new (flexibility, ingenuity, adaptivity) public agency virtues.
- Scale Dilemma: Measures of "significance" of innovation: incremental or disruptive change?
- Analytical Dilemma:
- Conflict between analysis and action.
- Timing in "planning" versus "groping" approaches.

3. Structural Dilemmas: Characteristics of Public Organizations?

- Organizational-Diversity Dilemma:
- Diverse, decentralized (to create innovations) or uniform, centralized (to diffuse innovations) organization?
- "Scaffolding" -- parallel temporary unit for transitions.
- Federalism Dilemma:
- Decentralization encourages experimentation, but is a barrier to nationwide adoption.

4. Replication Dilemmas: Dissemination?

- Adaptation Dilemma:
- How much and what kind of adaptation?
- Extended and continuous process suited to local conditions.
- Organizational-Adaptation Dilemma:
- Adapting organization to innovation, and innovation to organization.
- Changing routines and cultures.
- Organization most in need of change, often least capable of changing.
- Dissemination Dilemma:
- Quick and early.
- Experimentation, groping along, and learning.
- Definitional Dilemma:
- Defining the essence/core of the innovation.
- Disseminating and adapting to fit needs of new environment.

5. Motivation Dilemmas: Who Will Innovate?

- Media Dilemma:
- Journalist bias to highlight failure.
- Mesh innovative activities with journalist's bureaucratic routines.
- Reward Dilemma:
- Bonuses for incentives.
- Efficiencies leading to budgetary punishment.
- Sense of self-accomplishment and peer recognition.
- Elected Official:
- Creating expectations of improving performance through innovation.
- Recognizing innovative public servants.

Innovation in American Government's essays discuss how these different dilemmas confront public managers in domestic public policy cases. In one essay Altshuler develops what he calls "Meta-Innovation" as a strategy for overcoming the political-incentive problem. (Altshuler & Behn, 51-52) He links innovation with contemporary reinvention movement through a discussion of six general approaches to managerial reform, including citizen participation, customer focus, consumer choice, privatization, public-private competition, and performance benchmarking. Altshuler does not construct a framework to develop a model of innovation. Instead, he offers the six approaches as "umbrella strategies...to tap into popular themes of American culture...and address macro problems." (Altshuler, 63-64) At this point, he writes that the six meta-innovations are potential "harbingers of a shift in the fundamental paradigm of American public management toward performance and innovation."

One of the Altshuler essays is written by Moore, a professor at the JFK School. Moore addresses the subject of innovation in more depth in his book, *Creating Public Value*. Here he stresses the practical side of his approach to the subject of achieving excellence in public management. Moore writes about using his JFK School case studies during twenty years of teaching in executive development programs. Over time he has developed a set of lessons learned in the art of public management. His purpose is threefold. First, he makes an argument for a philosophy of public management to guide public policy toward adding social "value." He also develops a diagnostic framework to guide managers. This framework, or model, includes three interrelated concepts, including the manager's authorizing environment, organization or operational capability, and goal of delivering public value. Moore's third purpose is to identify kind of interventions, or decisions, managers can make to "exploit the potential of their political and organizational settings for creating public value." (Moore, 1)

Moore's orientation is on elites rather than the mid-level managers or public workers. He is most interested in those at the visible level of accountability including politically elected and appointed officials in executive branch agencies and senior civil servants. His methodology is interdisciplinary and includes ideas drawn from political science, economics, organization theory, public administration, administrative law and business management. He finds the public administration literature as the best, a "treasure trove" crucial as a starting point for guiding public executives. (Moore, 6). For the classic literature he notes the importance of traditional public administration scholars, including White, Herring, White, Waldo, Mosher, March, Simon and Kaufman. More recent writers he notes are Fesler, Kettl, Barzelay, Wilson and DeIulio. (Moore, 315)

The central problem Moore focuses on is how high level public executives make and implement policy. Thus, his model seeks to integrate the traditional public administration focus on public organizations with the public policy focus on policies. In his review of case studies, and the lessons learned by comparing success and failure, he develops three key prescriptions. First, managers must remain purposeful. Second, political management is necessary for policy development. Finally, the view of operational management must be recast to concentrate on stimulating *innovations of various kinds*. (Moore, 11-12)

Moore loosely defines innovation as a "new" approach or purpose in policy development. He views innovation, or experimentation, as an instrument, or way, to overcome the limited capability of organizations to change. (Moore, 55) The reader is cautioned to consider the number and pace of innovative programs. Moore worries about the strain involved in change and an organization's capacity to absorb innovative programs and idea. He includes a typology for describing the kinds of innovation. (Moore, 233-235)

1. *Policy or program innovation*. This includes new way to use an organization's resources to achieve the overall mission.
2. *Administrative innovation*. New methods of organizing, accounting, or controlling operations.
3. *Strategic innovation*. Redefining the basic purposes or core technologies of organizations.

Moore's strategic innovation confirms closely with Roberts's notion of transformational change. Strategic innovation can *include a new purpose, a new method or a new capacity for learning*. On the subject of organizational learning he cites the work of Argyris, Schon, Senge and Kanter. (Moore, 382) He writes that strategic innovations normally will include many lesser policy or administrative innovations. Cumulative policy and administrative innovations may also guide the path for strategic change. On the question of innovation by systematic planning or groping along, Moore sides with the groping theorists.

His analysis of the variety of cases points him towards advising managers to innovate when the opportunities present themselves. (Moore, 292)

Moore, Altshuler and Behn tend to draw their concepts in broad strokes. They write of public management and innovation as an art form. A more scientific approach is provided by Borins in *Innovating with Integrity*. There is a strong institutional connection between these four authors. Like the others, Borins focuses on the Ford Foundation-KSG School's Innovations in American Government competition. Borins developed a database of public sector innovation looking for explanations of how innovation happens. His research design included coding and statistically analyzing questionnaires by 217 semi-finalists in the Innovations Awards program from 1991-1994. His review of innovation notes the connections between the KSG School's approach to innovation and the ideas in Osborne and Gaebler's 1992 book, *Reinventing Government*.

Briefly, the KSG semi-finalists included programs in the six areas of informational technology, organization change, energy and environmental policy, building communities, social services, and education. The initial screening criteria for defining the programs innovativeness included its: novelty, significance in addressing a public (state or local) problem, value to clients and citizens, and transferability/replication. For finalists, the innovativeness was further defined in terms of its relationship or impact on: organizational structure, implementation process, obstacles, supporters and opponents, program evaluation, and future implications. From this set of questions Borins identified 13 characteristics of innovative programs, as described by the applicants themselves. (Borins, 21)

1. Holistic
2. Technological
3. Process improving
4. Empowering
5. Preventative, not problem-solving
6. Incentive based, not regulatory
7. Private-public partnership
8. Volunteers
9. New management philosophies
10. Encouraging attitudinal change
11. Providing groundwork for other programs
12. Included spillover effects
13. Begun with pilot programs

The empirical data showed that 61% of the applicants considered their programs as holistic. That is, they used a systems approach, included several organizations, and included multiple services. Characteristics 2 through 4 were on 33% of the applications; and 5 through 13 were on less than 20%. Borins cites this data as verifying, with reasonable accuracy, Osborne and Gaebler reinvention principles, such as: customer and mission driven government; community owned and empowering government; and enterprising and anticipatory government. (Borins, 30)

Additionally, Borins' statistical analysis provided more empirical evidence regarding the who, why and how of innovation. Some of his insights are somewhat surprising and go against the grain of conventional wisdom. On the question of "Who innovates?" the KSG applicants stress the role of career public servants or those Borins call "local heroes." (Borins, 37) He compares them to mavericks identified as innovators

in the private sector by Peters and Waterman (1982). This finding, Borins highlights, goes against democratic expectations of politicians guiding change, as well as the notion that public management bureaucrats fear change.

Borins identified four conditions to answer the question of "Why innovate?" The first and most frequent was due to *internal problems*, cited on 49% of the applications. Less than 10% of the cases cited resource constraints as a condition. A second condition was *opportunity* listed on 33% of the questionnaires. Crisis or failure was a third condition on 30% of the applications. The fourth conditions, *political factors*, was on 19%, with only 2% of those due to electoral mandates, while most frequently, 11% were due to legislative action. The fifth and final condition noted was new *leadership*, which was recorded on 9% of the responses. (Borins, 42-45)

These findings challenge some conventional wisdom in two areas in particular. First, it downplays the proposition that crises cause innovation, as Levin and Sanger stress. Second, Borins points out that problems and opportunities are not two sides of the same coin. Innovation is not an either or proposition. Each condition can motivate innovation on its own.

Borins addresses the two major alternative hypotheses used to explain the questions about "How to innovate?" (Borins, 49-64) The two alternatives include the planning model and the groping model. The planning model encompasses a strategic vision and plan to organize a comprehensive program for innovation. The groping along model is stressed in the writing of Behn (1988) and Levin and Sanger (1992 & 1994). Borins found that 59% of the cases included comprehensive plans, while 30% were characterized by groping. Only 7% were described as a result of truly large scale "strategic planning," which corresponds to Mintzberg's (1994) finding about the absence of strategic planning in the private sector. Borins further identified a third model for how to innovate that stressed using pilot programs. This conforms to Weick's (1984) writing about the importance of beginning with small wins. Pilot tests provide the opportunity for compromise, for learning incrementally, and for experimentation.

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To add explanatory power to these two models Borins also identified conditions under which each seemed to work. Conditions present for the planning model included those situations where there were: large capital investments; coordination of a large number of organizations; theory-driven programs; and an

impetus from the political system. In contrast, the context for groping included: no resource commitment; no interorganizational coordination; and a lack of theory and politics. Groping tended to occur in situations where there were new programs, new leaders, and innovation by public servants.

The empirical data from Borins study thus provides important insights into those KSG semi-finalists from 1991-1994. Importantly, especially in this era of bureaucrat bashing, mid-level management in the public sector initiated 50% of the innovations studied. This conforms to private sector experience that highlights innovation "bubbling up from below." (Borins, 284) This emerging trend goes against the traditional public service model of change being driven along command lines, vertically, from the top-down. This finding also is counter to crises as the "royal road to public sector innovation." Borins writes of a trichotomy of innovation initiators and circumstances.

1. *Politicians*—in the forefront in crises.
2. *Agency Heads*—in contexts of organizational change.
3. *Mid and frontline managers*—respond to internal problems and opportunities.

Another significant finding is that theories derived from research matter in innovation. Borins's research stressed the importance of theories derived from psychology, for instance family system theory; from pedagogy, such as standards driven education; and from criminal justice, such as community policing. Also important are the finding that estimating quantitative goals, measurement, data analysis and clients needs are important for the innovation process. [Note: This, I think, reinforces the importance of legislation such as the Government Performance and Results Act.] Borins' regression analysis confirmed that programs with formal evaluations from outsiders, with clear outcomes, could be replicated and were awarded.

Finally, Borins found that the most significant opposition to public service innovation came from within organizations. Conflicts were due to differing philosophies and ideologies, as well as bureaucratic and material self-interest. Gaining support for innovation required the use of persuasion as well as experimentation to build acceptance.

Borins concludes that his book adds evidence to support the new paradigm of New Public Management in the field of public administration. (Borins, 289-290) His empirical analysis confirmed the significance of the Osborne and Gaebler themes. Borins further identified additional research needs in the form of questions for future studies.

1. What is the importance of agency heads in planning change? (see James Q. Wilson, 1989).
2. Are small programs more likely to succeed if given distance from executive scrutiny? (see Levin and Sanger, 1994)
3. How do local heroes build support in their authorizing environment? (see Moore, 1995)
4. What are the differences in program initiation at different levels of government?
5. What is the role of politicians in the New Public Management?
6. What are the findings of studying innovative organizations over time, and in different jurisdictions?
7. What is the role of the private sector in innovative public-private partnerships?
8. Finally, what are the findings of extending studies beyond 1994, in developing new instruments to develop data, and a comparative, international database?

C. Organization Theory.

The literature reviewed for this paper on innovation in organization theory is less theoretical than "practical" in nature. For instance, In *Creating High-performance Government Organizations*, from the Alliance for Redesigning Government, Popovich and his writing team are centered on providing a handbook, or "concrete steps" for reinventors to use to transform their organizations." (Popovich, xiv) The Alliance is part of the congressionally chartered National Academy of Public Administration. Their intent is to provide a "Practical Guide" for those administrators to use performance management to follow the leadership of the legislative branch as evidenced by the 1993 Government Performance and Results Act. (Popovich, 4) Thus, the book is intended for assisting managers in climbing on board the congressionally mandated reinvention bandwagon. Their Guide includes tips about scanning the environment; identifying stakeholders; building commitment to change; and writing organizational vision, mission, and values statements. The Alliance stresses that assessments are the keys to motivating change by selecting targets of opportunity and monitoring progress. They offer techniques, such as giving voice to the customer and benchmarking. In their acceptance of congressional wisdom as reflected in GRPA they write that: "what is measured gets done; what is rewarded gets done well." (Popovich 78).

Cohen and Eimicke (1998) provide similar prescriptions in their book, *Tools for Innovators*. Here they provide ways or, as their subtitle states, "Creative Strategies for Managing Public Sector Innovations." The authors divide their innovative instruments into two categories, functional and innovation tools. Functional tools include budgeting, human resources, and innovation management. Innovation tools include reengineering, privatization and TQM (Cohen and Eimicke, 187). Rather than stress dilemmas, Cohen and Eimicke highlight lessons learned from their cases of innovative public sector organizations "managed by the government, managed using the nonprofit form of organization, and operated as a business." (Cohen and Eimicke, 198) They conclude that the three forms of organizations can innovate and interact in the process of delivering policy and programs. Their conclusions are prescriptive:

1. Leadership is a critical variable.
2. Change is gradual, and failure often precedes success.
3. Innovators use multiple tools.
4. Results must be measured.
5. Innovation must quickly become commonplace.
6. Standard operating procedures remain important.

These practices are intended to guide public managers to become creative in leading their organizations in a process continuous learning and innovation. The prevalence of the case method is also present in writings on organizations in the private sector as well. For example, Christensen, in *The Innovator's Dilemma*, examines companies—good companies—that failed to stay atop their industries when facing market and technological changes. Christensen also reduces his conclusions to a series of lessons learned. He calls them "principles" such as: "Principle #3: Markets that Don't Exist Can't Be Analyzed." (Christensen, xxi) In fairness to the author it should be noted that he does provide a framework regarding differences in sustaining (resulting in improved product performance) and disruptive (resulting in worse product performance) technological change over time. This is different than the previously identified differences in incremental and radical innovation. (Christensen, xiv-xvii) In his conclusions Christensen is modest in suggesting any general applicability of his research: "My purpose here is explicitly not to offer any so-called right answer to this particular challenge, nor to predict whether or how electric vehicles may become commercially successful. Rather, it is to suggest in a familiar but challenging context how

managers might structure their thinking about a similar problem by proposing a sequence of questions that, if asked, can lead to a sound and useful answer." (Christensen 187)

A caution here is in order. The call to look for examples from the business world to develop models for innovation in the public sector has several problems. First of all, especially for those authors using the case study method, it is difficult to discover attempts to develop common variables and causal relationships. The business literature that uses case studies would assist only in the exploratory research phase for model development and theory building. Christensen's book serves as an example of this problem. Perhaps the best use of material like his is to stimulate thinking during exploratory research. For instance, it would be interesting to look for cases of failure over time by public organizations once thought of as innovative and leaders in the field of public administration. If public school vouchers should fail in Minnesota, then it would be useful to compare and contrast finding in that case with the principles that Christensen stresses.

Rather than look to the business literature it may be more productive to examine work on organization theory that address public sector agencies. For instance Light's book on *Sustaining Organizations* is also intended for practitioners. Interestingly, he also focuses on cases of 26, relatively small, Minnesota organizations, with research into those involved in a "Surviving Innovation Project." Again the research time cycle covers a five-year period, from 1991-1996. His research included two to three-day site visits in 1994, to the 26 organizations, where they conducted 220 interviews based on an 84 question survey.

Light's book actually bridges the work previously discussed on public policy, management and organizations. He defines innovation as "acts that challenge the prevailing wisdom as it creates public value." (Light, xvi) Like Roberts he provides a holistic view of innovation. For innovative organizations he developed a four part model including: (1) the environment; (2) the internal structure; (3) leadership; and (4) internal management systems. (Light, 13) Like others in the public management school he defines characteristics for each of the four subsystems. For the external environment he identifies factors such as turbulence, shocks, support, collaboration, and slack. The internal environment includes shape (or how many people "touch" an idea within the organization), demographics, and internal turbulence, boundaries, and resources. Components of leadership include vision, temperament, communications, durability, and innovation skills. Finally, for internal management he points to mission, pay and personnel, learning, idea generation, budget and accountability and governance. Light's is not scientific or empirical in his research. Like the public management and organization theorists he points out lessons learned rather than key variables or hypotheses to develop causal relationships. Nevertheless, his observations correspond with other writer reviewed in this paper. Stressing a Roberts-like, holistic approach, he concludes that innovation tends to be less the product of heroic leaders that the "natural" and "tight alignment" of the four parts of his model.

Light also provides insights into the barriers facing innovators in each of the four areas. He also provides a long list of innovation myths. These include the propositions that: (Light44-55)

1. Innovation is the gift of the few (think systematically and collaboratively).
2. Innovation is the product of perfection (think trial and error).
3. Innovation is best under extreme stress (think of shocks to alert, not terrify).
4. Innovation is best done alone (again think collaboratively).
5. Strong adversity makes for strong innovation (think debate, not harassment).
6. Innovation means always saying yes (think about winnowing ideas purposefully).

7. Innovation involves a choice between art and science (think both).
8. Good management is hostile to good innovation (think management encouraging and protecting new ideas).
9. Innovative organizations keep secrets (think collaboration, cooperation, and coordination, derived from Hubbard, 1995).
10. Innovation is the path to organizational bliss (think tough work and innovation as a disruptive act).

Keeping faith with the traditions of public management, Light also lists ten practices for achieving innovation and preventing what he terms "organizational thickening." This includes more practical advice for leaders such as stay thin, create room for experiment, push authority down, lower barriers to internal communication, democratize, prepare for stress, maximize diversity, prime the organization for innovation, and age gracefully. Leaders are also provided a list of best practices including: be clear about decisionmaking; give permission to fail; communicate to excess; give permission to fail; pay attention to sequencing; teach the organization to say no and why to say yes; keep faith and intuition alive; stay balanced; and keep innovation in perspective. (Light, 135)

Light's concluding advice takes on religious tones (Light, 245-254). He ends with a section on values for innovators, such as trust, honesty, rigor and faith. Finally, he provides steps for sustaining an innovative organization:

1. Become a well-performing organization with a strong management system.
2. There is no substitute for mission focus.
3. Turn to the outside world.
4. Lower the barriers to internal and external collaboration, through experiments and calls for ideas.
5. Faith is important (forgive, endure, imagine—sustain a culture that includes a vision of a just society with confidence in human capacity).

Conclusions

In concluding it is tempting to characterize the recent innovation literature simply as too heavy on case studies and too light on theory-building. Borins's book stands out in its use of empirical research to add evidence to his arguments. The recent literature does point out the importance of attempts to define and develop best practices regarding innovation and reinvention. Given the number and length of the lists offered by the various authors it would be difficult to imagine a public servant, or anyone else, who has the capacity to put in place what the practical advice suggests.

The benefits of holistic approaches of researchers like Roberts, King and Light are useful for drawing out interrelationships. This seems especially true for complex issues that include a diversity of policy players during the life of complete policy cycles that result in the implementation of innovation. It would be useful to use systemic approaches first to set the overall context for innovation. Next it would be interesting to return to the approaches of Walker (on implementation) and O'Toole (on agenda setting) to focus on specific stages of the policy process within the broader, systemic context.

There is also a gap in the literature reviewed in looking at innovations in large organizations. In 1995 the Ford-KSG awards were expanded to include federal programs in addition to state and local innovations. Soon there will be a five-year period to attempt to replicate Borins earlier work at the national level.

There is also a need to continue to link the sub-fields in the study of innovation. A model should be developed to connect the work on innovation that includes the public policy, public management and organization theory fields. This approach could eventually take on a more empirical approach and attempt to turn characteristics into variables and lessons learned into hypotheses. Then additional research could be conducted to develop holistic models and identify causal relationships through empirical testing.

This work could be extended into the domain of defense policy. Currently "transformation" has become a common term used to describe changes in post Cold War defense policy, service organizations, as well as on going management reforms. Interviews with defense officials, think tank intellectuals, and Senate staffers point more to first order, incremental, rather than second order, radical, change. Research should be conducted to continue the research of authors, such as Altshuler, Behn, Borins, Moore, Light, Roberts, King, and the others. Their efforts at describing innovation can be used to develop models and hypotheses for additional research that will provide insights into the subject of innovative policy, management, and organization. These models, concepts, and case studies from the fields of public policy, public management and organization theory should be useful for examining the subject of military innovation.

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(1) The views expressed in this article are those of the author and do not necessarily reflect the official policy or position of the Army, Department of Defense, or the U.S. Government.