Reform of Public Organisations:
How to Induce More Proactive Responses to Emerging Risks

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One of the persistent frustrations in the field of public administration is the seeming inability of public agencies to act proactively in the identification, prediction, anticipation, prevention and/or management of emerging risks. With the benefit of hindsight, one can certainly question whether public agencies were sufficiently proactive in addressing a variety of systemic, emerging risks such as AIDS, threats to species diversity, the rising trend toward protectionism in trade, global climate change, the rise of obesity around the world, and the recent bout of financial crises. Indeed, recent reports from the International Risk Governance Council (IRGC) have documented a variety of pervasive "risk governance deficits" and described a dozen generic factors that appear to create fertile ground for the emergence of systemic risks.

In fairness to public agencies, it must be acknowledged that it is very difficult – and arguably impossible -- to know how often emerging risks have been prevented by the proactive behaviour of public agencies (in their current organisational form). The absence of risk emergence is typically unnoticed (precisely because harm does not occur) and any success stories of risk prevention that are noticed will be accompanied by many organisations (public and private) seeking to attract the organisational credit. And sometimes there are simple explanations for the failure of public agencies to act proactively: a lack of understanding that risk could possibly arise, a political imperative to ignore a festering problem, or a lack of money or human capital to support proactive management activity. Sometimes the simple explanations are the most difficult to resolve.

In this paper, we accept – at least for the sake of argument -- the IRGC propositions that systemic emerging risks are a pervasive problem worldwide, that prevailing public sector activities are not adequately responding to them, that the explanations for inaction are typically multi-faceted rather than monocausal, and that organisational changes of various sorts will often be necessary to inculcate a sophisticated "risk culture" in the responsible public agencies. The term "risk culture" is admittedly a fuzzy concept but, following Hale (2000), we refer to "the attitudes, beliefs, and perceptions shared by natural groups as defining norms and values, which determine how they act and react to risks and risk control systems." For example, a key feature of risk culture, as it relates to emerging risks, is a belief in the value of preparing for the unknown through early warning systems that predict and anticipate risks, thereby allowing timely efforts at prevention, mitigation and adaptation.

The question we address in this paper is the following: What insights can the fields of public management and organisation theory (and related fields and disciplines) offer us about the promise of using organisational change as a strategy to advance a public agency's professional risk culture? Stated affirmatively, we seek to combine knowledge of organisational change and risk analysis in order to chart strategies for reform of public agencies that might improve the overall process of managing emerging risks. We illustrate the key organisational concepts with examples from around the world, though with an admitted bias toward the United States due to the knowledge of the authors. We are eager to learn more at IRGC's December workshop about the experience with organisational changes in other countries.

The paper is organized as follows: We begin (1.0) with some operating definitions and assumptions that define our approach to the key question. We then (2.0) examine organisational change strategies that might be imposed on a public agency by an external source of authority such as an executive leader (prime minister or president), a legislature, or possibly a judicial or semi-judicial body. Assuming that a public agency is interested in reform (for external or internal reasons), we then (3.0) explore what the fields of public management and organisation theory tell us about the promise and limitations of internal organisational change, including barriers to change and how they might be overcome. Where feasible, we provide illustrations of the organisational concepts from international experience in risk management. We conclude (4.0) with some key issues that appear to be unresolved and might need to be addressed through further research, consensus building among practitioners and/or social experimentation.

1.0 OPERATING DEFINITIONS AND ASSUMPTIONS

The term “public agencies” refers to a wide range of governmental organisations (local, regional, national and international) that have direct purview over the people, businesses and other organisations, and systems (natural or man-made) that are associated with emerging risks. A legislature is not the type of public agency we have in mind because a legislature typically creates a risk management agency, which in turn has the direct purview that we have in mind. Thus, it is the UK Health and Safety Executive, not the Parliament (or even a subcommittee in the Parliament), that is a relevant public agency for our purposes. In the European Union, we are concerned with DG-Environment in the European Commission rather than the environment committees in the EU Parliament or the collection of member-state environmental ministers that comprise the European Council.

We do not mean to suggest that legislatures are necessarily less important than public agencies with regard to emerging risks. Indeed, legislatures are sometimes a culprit since they may be pressuring public agencies to focus on known risks rather than contemplate how to identify and manage emerging risks. We are simply defining the term public agencies in a way that limits the scope of the paper, since reform of an elected legislative body is obviously a different enterprise than reform of a professionally-oriented administrative agency. Likewise, we are not including judicial bodies under the umbrella of public agency, though we recognize that some risk management agencies exercise powers that are quasi-judicial in nature. Typically, the public agencies we have in mind deliver direct services to the public or use regulatory powers to ensure that certain types of services and protections are provided. Often the “public agencies” we have in mind are referred to as regulatory agencies (at least in the United States).

We are particularly interested in public agencies that operate in an environment where the following conditions are prevalent: scientific and technical expertise is a crucial aspect of the professional risk culture; the work of professional analysts may need to be encouraged, even though it could lead to conclusions that are embarrassing to elected officials or are unpopular among stakeholders and/or the lay public; the agency's work will benefit from various strategies of stakeholder and public outreach (both to gather necessary technical information and to better understand public opinions about evidence, values, ethics and tradeoffs); and the work of the agency, if not managed carefully, is vulnerable to undue influence by interest groups who have a stake in the outcome of the agency's work. Since we are concerned with emerging risks that have a systemic (and typically international) character, we are investigating risk issues where multiple public agencies around the world are examining the same or similar questions, even though the agencies may not be communicating with each other and even though one agency may have knowledge that another agency lacks. The technical nature of agencies also implies that they need to have access to data and information systems that supply (often imperfect) indications about risk emergence, though the relationship between the indications (e.g., the HIV virus) and the risk of harm (e.g., incidence of AIDS) may not be fully appreciated when the risk is emerging. Thus, agency professionals – even when behaving competently and with full integrity – may make mistakes due to imperfect knowledge, misinterpretation of knowledge or errors in human judgment (e.g., undue optimism or pessimism).

By emerging risk, we refer to the IRGC working definition: an emerging risk as one that is new, or a familiar risk that becomes apparent in new or unfamiliar conditions (e.g., the re-emergence of polio in areas where it had been eradicated). Emerging risks may be issues that are perceived as potentially significant, at least by some stakeholders or decision makers, but their probabilities and consequences are not widely understood or appreciated.

2.0 FORMAL ADOPTION AND IMPOSITION OF ORGANISATIONAL CHANGE BY AN EXTERNAL AUTHORITY

When a public agency is considered deficient in its response to emerging risks, an external authority such as a prime minister/president or legislature may seek to foster an improvement in agency performance through the imposition of various organisational changes. Recent literature from IRGC and other sources suggests a wide range of changes in function and form for making organisations better equipped at identifying, anticipating, and preventing and/or managing emerging risks. The evidence is mixed as to how effective these organisational changes are in accomplishing an improved risk culture in public agencies. Nevertheless, an approach for sorting through and categorizing these myriad ideas should enable decision makers to think in a more systematic way about the *content* of changes that can be adopted and about the relationships and interdependencies among these changes.

Daft (2008) has developed a typology of organisational changes that is helpful in this regard (see Figure 1). We have modified the typology to reflect the unique features of public organisations and the political environment in which they operate. The modified typology is presented below, along with examples of different types of organisational changes aimed at improving an organisation's ability to deal with emerging risks.

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Changes in Tools and Operating Technologies

Changes in tools and operational technologies pertains to changes in the means by which public organisations transform inputs into outputs and how they support the technical core of the organisation, including changes in methods, processes, hardware and software and other equipment. Such changes result in distinctive competencies and lead to greater productivity and effectiveness. Many ideas on which changes in this category are based emerge from frontline and low level employees who are close to stakeholders, scientists and citizens and are most familiar with how goods and services are produced. Generating innovative proposals calls for a more organic organisation with fewer rules and decentralized decision making to allow employees to create and introduce new ideas. Ironically, however, the chances for successful implementation of such ideas requires a more mechanistic structure with rules and processes for controlling employee behaviour and ensuring compliance with mandates to adopt changes. Organisation theorists have developed the concept of the ambidextrous organisation to reconcile these competing needs. Ambidextrous organisations have separate organically structured units responsible for generating innovations (Tushman, Anderson, and O'Reilly, 1997). These units exist within, but are insulated from, the organisational hierarchy.

One change in tools and operating technologies for dealing with emerging risks is the creation of more advanced early warning systems. Early warning systems allow decision makers and managers to detect preliminary signals of emerging risks so that action can be taken to avert their full impact. Effective early warning systems monitor the external environment for signals and help to assess the magnitude and timing of emerging risks. Swiss Re has developed SONAR (Systematic Observations of Notions Associated with Risk) to continuously detect and track initial risk indicators that might potentially impact the insurance industry. Various internal and external sources of data, including perceptions as well as harder evidence, are used to identify and evaluate emerging risks so that resources and effort can be directed toward the most threatening ones. In the United Kingdom and Singapore, the central governments have developed horizon scanning systems, which are used to systematically assess ongoing economic, social, cultural, environmental, health, scientific, technological, and political trends. The information gathered from this process is used to identify challenges, threats and opportunities facing government, assess government's capacity to deal with them, and inform government officials as they prepare policy responses to emerging situations.

The U.S. Fatal Accident Reporting System (FARS) for car crashes is another example of change to create a more effective early warning system. From 1950 to 1965 the United States experienced explosive growth in the number of deaths from motor vehicle crashes due to a growing population, the rising popularity of automobile travel, a growing number of teenage drivers, more sales of small (less crashworthy) cars and motorcycles, and other factors. While this "epidemic on the highway" (Moynihan, 1959) was recognized due to the leadership of some states (e.g., New York), the U.S. federal government was in the dark about the epidemic because there was no national census of fatal crashes in the United States. States had their own procedures for collecting crash data from police reports, and those procedures produced such large inconsistencies in state-level data that aggregation across the country was not scientifically recommended. In 1966 the U.S. Department of Transportation corrected this deficiency by mounting the Fatal Accident Reporting System (FARS), a census of every fatal car crash in the United States, including uniform police, medical, vehicle, highway and other data on each fatal event. Since its inception in 1966, FARS has emerged as the leading surveillance system for fatal motor vehicle crashes in the world. This data set has helped scientists identify emerging risks early in their evolution and helped in the evaluation of policies that have impacted risks (e.g., the upsurge in deaths when state drinking ages were lowered in the 1970s from 21 to 18 (including adverse effects on 16 and 17 year olds), the proliferation of fatal rollover crashes when sales of sport-utility vehicles (SUVs) increased in the 1990s (especially those SUVs built with a large height-to-width ratio), and the failure of recent state bans on cell phone use while driving to reduce rates of fatal crashes). Without FARS, many of the factors that contribute to fatal crashes may have been overlooked, or at least their numeric significance would have been underestimated or overestimated.

Changes in Outputs

Changes in outputs involve changes in the kinds of services and other outputs produced by public organisations, including soft services delivered directly to citizens and businesses, informational products, and regulations. Changes in outputs may involve either minor adaptations or the development of entirely new services produced by the organisation that are used to acquire material, human and informational resources and political support from the external environment. As with changes in tools and operational technologies, changes in outputs usually follow a bottom-up process and occur with greater frequency when a more organic structure is in place. Many ideas for changes in outputs and activities at public agencies spring from interactions with stakeholders, legislative staff, and scientists at colleges and universities, as well as from internal research and development efforts and simple trial and error.

Public organisations can enhance their ability to manage risks by providing information and guidance to key external stakeholders with whom they interact and depend on for resources and support. Public and nonprofit agencies such as the US Government Accountability Office, the Organisation for Economic Co-Operation and Development, and the US National Academies, produce a wide range of studies and other literature aimed at disseminating information about emerging risks to citizens, policymakers and industry. These informational products, together with consulting and research services, can raise the awareness of external actors to emerging risks and make it possible for them to prepare effective and timely responses to those risks.

Changes in Mission, Authority, and Formal Structure

Public agencies undergo changes in their formal structure, in their mission, and in the amount of legal and political authority granted to them by elected officials. Changes in the formal structure entail changes to the way work and resources are organized, such as reorganisations, as well as changes in the rules and procedures governing the behaviour of employees. Changes in the authority and mission of public agencies nearly always entails statutory changes in the form of new public policies and programs created by legislatures or resulting from executive orders. Thus, unlike the first two types of changes in Draft's typology, changes in formal structure, authority, and mission typically follow a top-down process, with ideas emerging from actors and institutions with political and legal authority over public organisations.

Several examples are offered of changes in the formal structure and design of public organisations aimed at dealing with emerging risks. The U.S. Atomic Energy Commission (AEC), established after World War II, was responsible for both the promotion of nuclear power and assuring its safety. Fearing that emerging risks were not being addressed proactively and competently, the U.S. Congress in 1974 abolished AEC. The safety assurance function was transferred to a new agency, the U.S. Nuclear Regulatory Commission (NRC), while the promotion function was transferred to what is now called the U.S. Department of Energy. Congress sought to fix what was seen as an inherent conflict of interest in the mission of AEC: the promotion of nuclear power and the assurance that the public was protected. The emerging risks of concern included radiation protection from routine operation of nuclear plants, the possibly of large-scale nuclear accidents (e.g., a large release of radiation following a meltdown of the reactor core), and safety of plant siting (e.g., in the event of natural disasters or a terrorist attack).

In order to better address the emerging environmental risks of energy use, notably climate change, the United Kingdom created in October 2008 the Department of Energy and Climate Change (DECC). This new agency brought together the energy policy functions and climate change mitigation functions that had previously existed in separate agencies. The new agency has helped establish the UK as a global leader in the development of public policies to slow the pace of climate change.

Changes in formal structure may be so drastic as to involve the creation of entirely new public agencies. From 1980 to 2001 a variety of food safety crises (e.g., mad cow disease, dioxin in Belgian poultry, and fear of genetically modified foods) caused the public to lose confidence in the food safety regulatory authorities in both Brussels (the European Union) and the EU member states. In January 2002 an independent European Food Safety Authority (EFSA) was established in Parlma, Italy, with the specific mission of advising regulators, policy makers and the public on the safety aspects of all items in the food chain. EFSA prepares scientific assessments, communicates with the public, and advises the European Commission, the European Parliament and the governmental authorities in the EU member states. EFSA's mandate covers not simply existing risks in the food supply but the identification and characterization of emerging risks. In 2010 EFSA published a technical report entitled "Development and Implementation of a System for the Early Identification of Emerging Risks in Food and Feed." While EFSA has broad authority in scientific assessment and communication, it has no regulatory authority, which is retained by the European Commission and the EU member states.

Public organisations may also be granted new legal and political authority to manage emerging risks. In 2005, the European Union adopted a new regulatory system for industrial chemicals that is designed to prevent emerging risks to public health and the environment from chemical exposures. Prior to 2005, the burden of proving that a chemical exposure was unsafe rested with the government. The 2005 law shifts the burden. Under the new law, a chemical manufacturer (in collaboration with distributors and users) must prove, to the satisfaction of government authorities in the EU and member states, that a chemical use is safe before the chemical may be introduced into commerce. Safe does not necessarily mean completely free of risk. Some risk is permitted as long as long as it is demonstrated that a search for safer substitutes has occurred and none have been found that have a superior balance of risk, cost and benefit.

Changes in Human Capital, Leadership, and Values

The last category of change involves changes in the members of an organisation and the values they hold, including norms and standards, attitudes, expectations, knowledge, skills, abilities, roles and other patterns of behaviour. In generic terms, organisational culture is a multifaceted concept that has been defined as a system of shared meanings held by members of an organisation or as “the set of shared, taken-for-granted implicit assumptions that a group holds and that determines how it perceives, thinks about, and reacts to its various environments” (Schein, 1996, p. 236). An integral part of culture are the values and norms of an organisation, formally espoused values and norms and enacted ones that become manifest in employee behaviour. The basic assumptions underlying these values are also a key facet of culture. The values and norms of an organisation that has developed a risk culture serve to promote cohesiveness and commitment to the task of effectively managing risks. Very strong organisational cultures, however, can result in resistance to change and insular organisations that experience difficulty collaborating with other organisations.

Organisations can also provide training and development opportunities to their employees that provide them with the knowledge, skills and abilities (KSA’s) necessary to effectively detect and deal with emerging risks. Certain KSA’s seem particularly critical. Employees need analytical skills to examine and evaluate emerging risks and forecast future impacts, as well as knowledge of how loosely coupled systems work in order to see interdependencies and causal connections among factors in the environment. Effective risk management also requires the ability to resolve conflicts among disparate groups and organisations, communicate effectively with a variety of actors, and coordinate the efforts of organisations with competing interests, values, cultures and capacities to deal with emerging risks. Collaborative management skills and abilities might be especially valuable, particularly those that enable managers to shape policy issues and public priorities, mobilize resources, facilitate mutual adjustment, and build inter-organisational trust (Bingham and O’Leary, 2008; Agranoff and McGuire, 2003).

Achieving Subsystem Congruence or “Fit”

Advocates of subsystem congruence argue that organisations consist of various interdependent subsystems (e.g., human capital, training, reward systems, work design, technology, information, and control subsystems) that shape behaviour and influence performance (Armenakis, Harris, and Field

2001; Nadler and Nadler, 1998; Shareef, 1994; Tichy, 1983). For organisations to perform effectively, these various subsystems must be aligned and brought into harmony with each other and with the external environment. As Nadler (2006) explains, "In systems the interaction of the components is more important than the components themselves. In terms of the organisation, its overall effectiveness relies on the internal congruence, or fit, of its basic components. The tighter the fit, the greater the effectiveness" (p. 259). If organisational change is to succeed, then, these various subsystems must be aligned with overall strategy so as to discourage regression to previous patterns of behaviour (Mohrman and Lawler, 1983; Nadler and Tushman,1980, 1989). This often requires adopting and implementing not a single change but a set of reinforcing changes, all inducing or encouraging the same changes in behaviour.

The different types of changes described and categorized above should be seen as potentially complementary pieces of a broader change agenda aimed at enhancing the ability of public managers to respond to emerging risks. Adopting a single change is unlikely to have the desired effect. It is crucial to look for changes that complement and reinforce each other. For example, having the political and legal authority to act creates opportunities for change in how a public organisation deals with emerging threats. However, meaningful and lasting change in behaviour is more likely to occur in the organisation when new authority to act is coupled with changes in policies, values and norms that induce members to be proactive in managing risks. Giving employees the KSA's and operational technologies and tools like more capable early warning systems, as well taking steps to redesign the organisation to group and coordinate work more effectively, serves to further increase the chances that a new direction toward fostering a risk management culture will be sustained.

Figure 1. Daft's Modified Typology of Organisational Changes

Changes in Tools and Operating Technologies Develop early warning systems and other risk assessment tools	*Changes in Outputs* Produce knowledge and advice for citizens, policymakers, and industry
Changes in Authority, Mission, and Formal Structure Reorganize and consolidate work units Change organisational policies and procedures	*Changes in Human Capital, Leadership and Values* Enhance employee knowledge, skills, and abilities needed for dealing with emerging threats Foster values that promote a risk culture

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3.0 INTERNAL IMPLEMENTATION OF ORGANISATIONAL CHANGES IN PUBLIC AGENCIES

Even if we assume that the leadership of a public agency seeks to accomplish organisational change, it is not easy to accomplish meaningful and durable change in an agency, particularly in its risk culture. In the previous section, a number of ideas were discussed for changing various components of an organisation in order to improve its capacity to deal with emerging risks. Regardless of the content of change, implementing organisational change generally requires changes in the day-to-day behaviours of managers and employees that are notoriously difficult to achieve. In order to gain insight into how to effectively implement organisational change in public agencies, we consult the organisation theory and public management literatures, and other related literatures, and derive six propositions that have garnered significant empirical support (see Fernandez and Rainey, 2006).

It is important to keep in mind two things when reviewing these propositions. First, we use the policy stages heuristic to divide the process of organisational change into the adoption stage and implementation stage, with the focus of this section of the paper being on the latter. As with most heuristics, doing so oversimplifies reality, since some of the factors discussed in these propositions are relevant during both stages of the policymaking process. For example, having abundant resources and political support increases the likelihood of adoption as well as improve the chances of successful implementation of organisational changes in public agencies. The actors, structures, and behaviours involved during adoption and implementation are sufficiently distinct, however, to warrant their treatment as separate stages or phases of the broader process of organisational change in the public sector. Second, even though experts have portrayed the change process as a linear progression through successive stages similar to those discussed in this paper (e.g., Greiner, 1967, Armenakis, Harris and Field, 2001; Kotter 1995), the process rarely unfolds in such a simple stepwise fashion (Van de Ven, 1993; Amis, Slack, and Hinings, 2004). The six propositions relate to factors that can influence the change process at different stages of the implementation process. For instance, persuasively communicating the need for change is essential for reducing resistance to change during the early phase of the change process, but this practice also helps the organisation maintain momentum during latter stages of implementation. Similarly, resource munificence is crucial when changes are launched as well as to sustain efforts to implement them. We now present our propositions.

Persuade Employees and Other Stakeholders of the Need for Change

Individuals in organisations resist change for a variety of reasons (Kets de Vries and Balazs, 1999; Rainey, 2009). Some ideas are poorly conceived and based on faulty logic, while others are opposed or avoided because of their perceived negative consequences for members of an organisation. The mere uncertainty surrounding many organisational changes can be enough to provoke fear and engender resistance to change.

Employee resistance can be especially problematic for those promoting change in public agencies. Elaborate civil service systems make it more difficult to redeploy human resources and remove employees who obstruct reform (Rainey, 2009; Fernandez and Rainey, 2006). With such safeguards in place, careerist civil servants may and often do delay and drag their feet while waiting for favorable changes in political leadership within the agency. Political appointees leading U.S. governmental agencies often have limited knowledge of the inner workings of their agencies, have little prior experience in dealing with their careerist subordinates, and serve for short tenures (Meier and Bohte, 2007). Consequently, buy-in from the political leadership alone will typically be insufficient to accomplish durable changes at public organisations.

The question of how to overcome initial resistance to change is an enduring one, dating back to Lewin's (1947) groundbreaking work on changing human behaviour in organisations. Lewin posited that there were two approaches to overcoming initial resistance to change, or two methods of "unfreezing" individuals: adding force in the desired direction or diminishing opposing forces. Lewin argued, and much research since then has confirmed (see Gallos, 2006; Burke, 2010), that the latter approach is more efficacious. Schein (1996), who elaborated on Lewin's work, described some of the underlying cognitive processes involved in motivating employees to change. Three necessary processes for overcoming initial resistance to change were identified. First, employees must be confronted with evidence that disconfirms, or fails to confirm, the desirability and sustainability of the status quo, such as data indicating declining performance or customer dissatisfaction and the ultimate consequences of such trends. Second, employees must be induced to feel "guilt-anxiety" for not acting to change the current state of affairs. Lastly, these first two processes must be accompanied by the creation of psychological safety among employees so that they do not fear embarrassment, humiliation, or loss of self-esteem resulting from changes in behaviour.

As De Vries and Balazs (1999) explain, the catalyst for most changes is a combination of discontent in the form of stress or psychic pain followed by a focal event that triggers a behavioural response aimed at reducing the stress. Leaders can, and often do, capitalize on these conditions to promote organisational change. Short of fabricating a crisis, leaders can "foment dissatisfaction" (De Vries and Balazs, 1999) by convincing employees that preserving the status quo will prolong or even accentuate the pain (Nadler and Nadler, 1998). Resistance to change can be reduced even further by offering hope in the form of a compelling vision of how stress and discomfort will be alleviated (Kets de Vries and Balazs, 1999; Suchman, 1995). The vision should present a clear image of the future that is easy to communicate and that organisational members find appealing (Kotter, 1995, Judson, 1991, Galpin, 1996; Maira and Scott-Morgan, 1996), while also providing overall direction for the change process. The vision should serve as the foundation from which to develop specific strategies for arriving at a future state. To convince individuals of the need for change and begin the process of "unfreezing" the organisation, Armenakis, et al. (2001) suggest the need to employ effective written and oral communication as well as various forms of active participation. Messaging is typically designed to transmit five core messages to those in the organisation: change is needed;

we have the capability to successfully change; it is in our best interest to change; those affected support the change; and the change is desired or appropriate for the organisation.

Kemp, et al. (1993) concluded that successful implementation of strategic management in the U.S. Equal Employment Opportunity Commission was partly attributable to the top executive's continual efforts to clearly convey the message that change was high on his list of priorities. Bingham and Wise (1996) found that federal agencies often failed to fully adopt alternative dispute resolution (ADR) techniques due to the inability of top management to disseminate information about the new policy and convince employees of the need to implement it. U.S. President Ronald Reagan appointed William Ruckelshaus as Administrator of the Environmental Protection Agency in 1983 amidst a series of scandals and leadership debacles. Ruckelshaus quickly rebuilt confidence in EPA by establishing "risk assessment and management" as the dominant professional theme for agency activities. He deemphasized politics while highlighting the roles of science, economics and citizen participation in agency decisions.

The sustained leadership and commitment of Charles DeGaulle to the development of France's nuclear energy program is widely considered a success story in the field of governance and risk management. Recognizing France's lack of petroleum and the emergence of energy security risks, DeGaulle persuaded the public and government officials of the need for nuclear energy and, more importantly, remained committed to this agenda for many years after World War II. Today France stands out in Europe as the country with the best-developed nuclear energy industry and the least dependent on high-carbon sources of electricity

Commit Sufficient Resources to Launch and Sustain Change

Planned organisational change should be viewed as an investment with the possibility of future returns. Launching and sustaining organisational changes entail redirecting scarce organisational resources—including financial, material and human resources—toward a host of new activities, including planning for change, acquiring new technologies, training employees, developing new processes and practices, and restructuring and reorganizing all or part of the organisation (Burke, 2010). The success of planned change depends in large part on the availability of resources to support these activities. Failure to provide adequate resources in support of a planned change initiative is likely to result in feeble efforts to implement the change, higher levels of interpersonal stress, and even neglect of core organisational activities and functions.

Providing the resources needed to adequately implement changes is especially important from an employee motivation perspective. Expectancy theory of motivation (Vroom, 1964) predicts that an individual's motivation is a function of the following three variables: the perceived probability that a given level of effort will result a certain level of performance (expectancy 1); the perceived probability that a given level of performance will result in the attainment of a certain reward or outcome (expectancy 2); and the value attached to that outcome (valence). The first expectancy has been equated with self-efficacy, the belief that one has the ability to perform effectively or achieve a certain outcome. These three variables interact in a multiplicative fashion to influence motivation, meaning that increasing the value of all three variables serves to increase the level of effort exerted. Having sufficient resources to implement and institutionalize organisational changes will increase one's confidence in succeeding at change and encourage behaviour in the desired direction. The literature on employee empowerment indicates that employees become more innovative and perform better when they feel psychologically empowered to act (Thomas and Velthouse, 1990; Spreitzer, 1995). Psychological empowerment is a function of having the authority or discretion to make decisions affecting one's work, along with the possessing the resources necessary to succeed (Bowen and Lawler, 1992, 1995).

Research on administrative reforms in the U.S. demonstrates the importance of providing adequate resources for successful implementation of change. Bingham and Wise (1996) found that the implementation of alternative dispute resolution techniques often failed at the federal level due to the fact that no new financial and human resources were provided for training or for disseminating knowledge of the innovation throughout the ranks of implementing agencies. Efforts to implement Total Quality Management and various personnel reforms in Florida likewise suffered from a lack of adequate staffing and funding for training, development and other activities (Berry, et al., 1999). When multiple administrative reforms are adopted and implemented simultaneously, resource scarcity can cause managers to make trade-offs, with low-cost changes taking precedence over, or even displacing, those changes that are more costly to make (Chakerian and Mavima, 2000). Such shortcuts are particularly problematic when the changes are interdependent and need to be implemented sequentially or simultaneously.

Given the heavy demands on declining public sector resources, initiatives to address emerging risks may need to harness new sources of revenues. In the United States, many regulatory programs aimed at managing technological risks (e.g., nuclear plant safety, food additives, pesticides and pharmaceuticals) are financed through fees on regulated companies rather than general governmental revenues. In some cases, new organisational forms are created to ensure funding, objectivity and independence. For example, the Health Effects Institute (HEI) in Cambridge, Massachusetts is a private, non-profit research organisation that is funded equally by the U.S. Environmental Protection Agency and a group of engine and motor vehicle manufacturers. The mission of HEI is to supply objective scientific information on emerging risks associated with automotive fuels and engines, including various fuel additives and formulations. While HEI does not regulate or perform official risk assessments, it has a strong track record in providing relevant scientific knowledge on emerging risks to the EPA and global auto and engine companies.

Set Goals, Develop an Implementation Plan, and Monitor Progress

Convincing members of an organisation of the need for change is certainly not enough to bring about actual change. The new idea or vision must be transformed into a course of action or strategy, with goals, a plan for achieving them, and efforts to monitor progress (Kotter, 1995; Redwood, Goldwasser, and Street, 1999; Nadler and Nadler, 1998; Carnall, 1995; Judson, 1991). This strategy serves as a roadmap for the organisation, offering direction on how to arrive at the preferred end state, identifying obstacles along the way, and proposing measures for overcoming those obstacles. As Kotter (1995) explained, the basic elements of the vision should be organized into a strategy for achieving that vision, so that the transformation does not disintegrate into a set of unrelated and confusing directives, activities, and programs.

Several aspects of goals are important when it comes to encouraging managers and employees to change. Goal setting theory of motivation posits that certain attributes of goals make them more effective at increasing effort and performance (Locke and Latham, 1990; Latham and Locke, 1991). Goals should be specific so as to guide behaviour in a clear direction. Specific goals indicate what acceptable behaviour is and what actions are to be avoided. To be most effective, goals should also be challenging and difficult to achieve, yet attainable so as not to demoralize those in pursuit of them. More difficult goals arouse employees into action, thereby increasing effort to change. They also seem to increase persistence in the form of duration of time spent trying to reach goals.

Research on implementation of policy and organisational changes in the public sector has demonstrated the importance of goal specificity. Mazmanian and Sabatier (1989) found that specific goals help to ensure that the policy implemented in the field corresponds with the formal policy, by limiting the ability of implementing officials to change the policy objectives and by providing a standard to hold implementing officials accountable for their actions. As Bingham and Wise (1996) and Meyer and Dillon (1999) discovered, policy ambiguity can sow confusion, which allows public managers to reinterpret the policy and implement it in a fashion that brings about few of the changes that were intended by policymakers. Montjoy and O'Toole (1979) examined the relationship between goal specificity and the provision of new resources and found that a specific goal accompanied by new resources was a highly effective method of ensuring that a policy was implemented as designed.

Research also shows that the degree to which employees are committed to goals has a positive effect on effort and performance, with the effect increasing as goals become more challenging (Locke and Latham, 1990). Goal commitment can be increased by offering financial and intrinsic rewards when goals are achieved, through encouragement and psychological support, and by allowing employees to participate in the goal setting process (Latham, Locke, and Erez, 1988). Participating in goal setting increases the odds that employees fell they have a personal stake in achieving a goal, as the goal may reflect their self-interests. Moreover, having a voice in the goal setting process increases feelings of procedural justice.

Employee participation throughout the process of goal setting and planning for change can be a particularly important issue in the public sector. As Warwick (1975) asserts, career civil servants in the U.S., motivated by caution and security, can use to their advantage the frequent turnover among top political appointees and simply resist new initiatives until a new administration comes to power. Their participation in the various stages of change can help to reduce this kind of resistance to planned change. Kemp, et al. (1993) found that widespread participation created a sense of ownership that helped to build momentum. Thompson and Sanders' (1997) analysis of change within the Veterans Benefits Administration suggests that successful change may require various bottom-up participatory elements, such as delegating decision-making to middle management and granting

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frontline workers greater discretion to implement changes. They note, however, that top management still has a critical role to play by encouraging and rewarding innovation and expressing support for the change.

Participation, however, is not a magic bullet for overcoming resistance to change. Bruhn, Zajac, and Al-Kazemi (2001) advise that participation should be widespread and span all phases of the change process. They stress, however, that leaders must take participation seriously, commit time and effort to it, and manage it properly. The failure to do so can be counter-productive in terms of wasted time, morale, and resources. One study of a planned change effort at the United States Postal Office found that employee participation was insufficient for bringing about a change in organisational culture (Shareef, 1994); lasting cultural change necessitated changes in other organisational sub-systems in addition to employee participation in the early analysis phase of the transformation process. Piderit (2000) distinguished between participation aimed at generating employee approval of a change and a more open form of participation that encourages discussion and conversation among employees. According to him, initial ambivalence to change is essential before a change can be implemented, and he argued for managers to engage in the latter form of participation, which allows employees to openly voice their ambivalence.

Once goals have been set and a plan developed, monitoring of implementation efforts should occur periodically, producing information that managers can act upon to make adjustments during implementation in order to achieve a better fit between ideas and their organisational context. Monitoring should be based on measures that capture phenomena over which managers have influence, including employee work-related behaviour, work processes, and outputs. The measures used to monitor progress should also be compatible to the extent possible with existing tools or methods for collecting data, thereby reducing transactions costs. Importantly, sharing performance information with employees helps to increase employee goal commitment and effort, especially when challenging goals have been set (Erez, 1977; Locke and Latham, 1990).

Have Organisational Leaders Who are Committed to Change

The role of leadership in promoting organisational change is a critical one, especially during the implementation phase of organisational change (Kotter, 1995; Yukl, 2002; Johnson and Leavitt, 2001; Rainey and Rainey, 1986; Greiner, 1967; Burke, 2010; Nadler and Nadler, 1998). Studies of organisational change have stressed the importance of having a single change agent or idea champion lead the transformation (Kanter, 1983). Such an individual is often a high-ranking official with authority to lead and the capacity to marshal resources and maintain momentum and commitment to change, often taking personal risks in the process. Effective change agents draw from several sources of power, including formal authority, but also expert and referent power. Implementation scholars have found that a skillful and strategically placed individual leader or “fixer” can, in the absence of a hierarchical implementation structure, coordinate the behaviour of disparate

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actors by leveraging close ties with other key actors and pursing informal avenues to overcome obstacles during implementation (Bardach, 1977; O'Toole, 1989).

Other authors have stressed the need to have a guiding coalition to support the change, a group of individuals who can lend legitimacy to the process and marshal the resources and emotional support required to get organisational members from disparate units to change their behaviour (Kotter, 1995; Yukl, 2002; Kets de Vries and Balazs, 1999). Kotter (1995) asserts that one or two managers often launch organisational renewal efforts, but that successful transformations are led by a broader leadership coalition that grows over time. "Whenever some minimum mass is not achieved early in the effort, nothing much worthwhile happens" (Kotter, 1995, p. 62). Change in pluralistic organisations with diffuse centers of power and conflicting objectives poses an even greater challenge to achieving lasting change, as it may require a collective leadership group composed of members who can play complementary roles and help to link or "couple" the organisation's leaders, the leaders with their organisational constituencies, and the leadership team with the external environment (Denis, Lamothe, and Langley, 2001). Given the size and complexity of many public agencies and the variety of missions and interests pursued by their members, a guiding coalition whose members represent the interests of different formal units and informal groups should have greater influence over the implementation process than a single idea champion.

Whether in the form of a single change agent or a guiding coalition, considerable evidence indicates that the presence of leaders committed to change is an important determinant of successful implementation of organisational change in the public sector (Abramson and Lawrence, 2001; Berman and Wang, 2000; Bingham and Wise, 1996; Daniel, 2001; Denhardt and Denhardt, 2001; Hennessey, 1998; Kemp, Funk, and Eadie, 1993; Lambright, 2001; Rainey and Rainey, 1986; Thompson and Fulla, 2001; Weissert and Goggin, 2002; Young, 2001). Boyne (2004), in his analysis of research focusing on ways to improve government performance, found that managerial leadership was one of the two most important determinants of success. Aucoin (1990) attributes failure of administrative reforms in Canada to lack of support from the cabinet ministers, who simply did not care much about the reforms. In the public sector, top management support often requires the support of top-level career civil servants in addition to politically appointed executives. The need for leadership continuity and stability raises particular challenges in the public sector in the U.S., given the frequent and rapid turnover of many executives in government agencies, as compared to business executives. This may explain why, contrary to stereotype, many significant changes in government have been led by career civil servants (Borins, 1998; Holzer and Callahan, 1998; Rainey and Rainey, 1986).

Generate External Stakeholder Support for Change

Public organisations operate at the center of a complex web of external actors with diverse interests, agendas and values and with political influence over agency decision making. Some of the defining features of the public sector include greater diversity and intensity of political influence from external actors, greater reliance on political support from political overseers, interest groups, constituencies, and the general public, and dependency on elected officials as sources of financial, material, and human resources essential for organisational survival (Rainey, 2009; Wilson, 1989; Gormley and Balla, 2008). As a result, the likelihood of achieving successful organisation change in the public sector in highly contingent on the ability to generate external support from political overseers and other key external stakeholders.

As Golembiewski (1985) suggested in his assessment of organisational development in the public sector, attaining support from governmental authorities and political actors involves serious challenges, given the constraints imposed by the political context in which public organisations operate. The fact that public agencies often have multiple political masters pursuing different objectives, and that politically appointed executives and career civil servants often have very weak relationships only serve to complicate planned change in public organisations. Despite these challenges, public managers implementing change in their organisations must persist in their efforts to obtain support from powerful external actors.

The considerable influence of legislators on the outcomes of organisational change stems in part from their ability to control the flow of financial resources to an agency and to impose statutory changes that can either enable or impede efforts to change. Legislative oversight can also help promote change by generating public interest in organisational changes underway in an agency. Alternatively, oversight from hostile legislators can embarrass agency officials and discourage significant moves away from the status quo. Chief executives can help promote organisational changes by selecting political appointees who are sympathetic to the change and have the knowledge and skills required for managing the transformation. Chief executives who have been given the power to restructure and reorganize the bureaucracy can directly affect change in organisational structure. Their power to review and influence agency rule making can also enable agencies to institute rules and procedures that reinforce and help institutionalize behavioural changes. Finally, support from constituencies and interest groups can be instrumental in gaining additional resources as well as autonomy from political overseers to allow public managers to launch and sustain a change initiative. Constituencies who receive services from agencies also play a key information role, providing feedback on how organisational changes are affecting the volume and quality of organisational outputs.

The impact of support from political overseers and other external stakeholders with political influence over an agency has been observed by policy implementation scholars for some time (Mazmanian and Sabatier, 1989). More recent studies of public sector reform also have begun to stress the importance of external political support from political elites as well as from the public at large. Berry, Chakerian, and Wechsler (1999) noted that the governor's high level of commitment and support for particular reforms in Florida had a substantial influence on the degree of implementation (see also Chakerian and Mavima, 2000). Changes that could be implemented quickly and cost-effectively seemed to generate more support from elected officials than those requiring with higher implementation costs and requiring much more effort and time to implement. Reforms that are perceived by public managers and employees as hostile to them, that occur simultaneously with cutbacks, and that are risky politically may require the highest levels of support from political overseers to be adopted and implemented fully. Support from other key external stakeholders seems equally important. Thompson and Fulla (2001) concluded that the interest group environment was an important determinant of agency adoption of the National Performance Review (NPR) reforms. They found that the presence of strong interest groups who were opposed to an agency's NPR reforms served as a constraint on the extent of change within several federal agencies, and outright opposition by such groups at times resulted in modification of the proposed changes in order to satisfy them.

In the aftermath of the radiation contamination from the Chernobyl nuclear accident (1986), affected communities have experienced persistent difficulty in meeting the challenge of community cleanup and rehabilitation. In March 1996, the European Commission launched a three-year pilot research project to examine how collaboration among government agencies, universities and community leaders can make rehabilitation progress in the village of Olmany, district of Stolyn (Brest region), Republic of Belarus. While the Ministry of Emergencies of Belarus has a key coordination role, the project is characterized by multi-party decision making aimed in part at generating public support for the project. Called the ETHOS project, the activity goes beyond risk communication and includes community participation in radiological monitoring, risk management, and urban redevelopment.

Take Steps to Make the Desired Changes in Behaviour Routine

For organisational change to be fully implemented, members of the organisation must incorporate the new policy or innovation in their daily tasks and routines. Changes in behaviour must be learned and made routine in the short term and institutionalized over the long haul, so that new patterns of behaviour effectively displace old ones (Lewin, 1947; Schein, 1987; Edmonson, Bohmer, and Pisano, 2001). Concern over the need to institutionalize change dates at least as far back as Lewin (1947), who observed that changes in group behaviour are frequently short-lived. Unless a new state of permanency is achieved, and new patterns of behaviour are made relatively secure against change, the newly adopted behaviours will eventually dissipate.

Schein (1987) argues that for changes in behaviour to become the new status quo, two things must be accomplished. First, employees must be made to feel comfortable with the new behaviour by linking it with their self-concept or personal identity. This involves creating opportunities for employees to practice the new behaviour (e.g., during training, team exercises, and simulations), providing them with feedback, and rewarding or reinforcing the behaviour. Second, the individual's new behaviour must be made consistent with the behaviour, attitudes, and norms of those around him/her. This often requires making at least some change to organisational policies, practices, expectations, and rewards that shape the individual's immediate work environment as well as the overall organisational context. This advice echoes the concept of sub-system congruence discussed earlier in the paper.

Armenakis, et al. (2001) developed a model of how to institutionalize change so that gamma change occurs, that is, so that the paradigm through which organisational members interpret and understand events changes. According to the authors, there are several different strategies leaders can adopt to reinforce and institutionalize change, including modifying formal structures and procedures and human resource management practices; using rites and ceremonies; diffusing the innovation through trial runs and pilot projects; collecting data to track the progress of, and commitment to, change; and having employees engage in active participation tactics that foster "learning by doing." Examples of active participation tactics include enactive mastery, or the building of competence and skills through gradual modification of behaviour, and vicarious learning, a process during which organisational members observe others who are modeling the new behaviour in a way that conveys the benefits of adopting it. According to social cognitive theory (Bandura, 1986; 1997), people learn by observing and then emulating the behaviour of others, a process called vicarious or "second-hand learning." Role modeling can take place in a formal setting, with a trainer playing the role of role model. However, managers can also encourage and reinforce changes in behaviour informally by modeling the behaviour in front of subordinates.

Judson (1991) cites many of the same strategies mentioned by Armenakis, et al. (2001), but he places a particularly strong emphasis on the need to collect data and monitor the implementation process so that managers are aware of the extent to which organisational members have adopted the innovation. Evaluation and monitoring efforts should continue even after the innovation is fully adopted to insure that organisational members do not lapse into old patterns of behaviour.

Several experts, in additional to Armenakis, et al. (2001), have underscored the need to implement change gradually or incrementally so that the innovation is tested and proven on a small scale before an attempt is made to have the entire target group adopt it (Greiner, 1967; Kotter, 1995; Rainey and Rainey, 1986). Successful implementation on a small scale helps to build momentum and demonstrates to organisational members the benefits of change. Small-scale or gradual implementation, however, may prove to be more of a challenge in the public sector than in business, particularly in the U.S., given how frequent shifts in political leadership and short tenures for political appointees can cause commitment for change to wane over protracted periods of time.

In both Europe and the United States, infections induced by hospitalization have been linked to the day-to-day activities of personnel who are complacent or negligent about correct hygiene practices. These infections lead to tens of thousands of preventable deaths each year as well as billions of dollars in economic damages. The risks are certainly well known but are emerging in new ways due the widespread use of medical technology: intubation tubes, catheters, surgical drains, tracheostomytubes and more. In effect, the new technologies are another way to infect patients, who may be particularly vulnerable to infection due to compromised immune systems. The tools of industrial quality control and industrial hygiene are now being applied consistently and with vigor in many hospitals on both sides of the Atlantic. Former CEOs of industry, including former Chairman of ALCOA (the aluminum giant) Paul O'Neill, have insisted that hospital personnel can achieve the near perfection in daily hygiene practices that has already been achieved in many modern manufacturing enterprises.

4.0 CONCLUSION

Our survey of organisational behaviour revealed a literature rich in concepts and plausible suggestions but admittedly limited in compelling applications to the management of emerging risks. And the paucity of validated knowledge in this field of application should not be surprising.

A distinctive feature of systemic, emerging risks is that they arise unpredictably and with low actuarial frequency. Thus it will be difficult to detect a favorable or unfavorable change in frequency due to any particular condition of organisational stagnation or reform. We should expect therefore that public agencies, including the politicians who oversee them, will tend to be lured into a false sense of complacency about their effectiveness and preparedness.

For public agencies with responsibility for control of both existing and emerging risks, a fundamental challenge is the wise allocation of scarce scientific and monetary resources among the two types of risks. The day-to-day pressures, including media attention and concerns from

constituents, will tend to drive agencies to focus on known, existing risks. When a systemic risk begins to emerge, it may be difficult for public agencies to respond with sufficient vigor. When damages ensue, the predictable blame game can produce embarrassment at public agencies and a possible overreaction, including some neglect of existing risks.

The experience of the USA after 9/11 is as sobering as it is instructive. Consensus on the U.S. federal government's role in disaster management was slow to develop. Preparation for natural disasters was seen as a responsibility of governors and local officials while the distribution of post-disaster assistance was viewed skeptically as a way for national politicians to assist their local political allies. Congress did consolidate federal functions in the Disaster Relief Act of 1974, and the Federal Emergency Management Agency (FEMA) was established in 1979. But the early focus of FEMA was civil defense in the event of nuclear attack and neither the Clinton nor the George W. Bush administrations were particularly generous toward FEMA's budget. On the heels of 9/11 and the political imperative to "do something" about terrorism, the new Department of Homeland Security was created and FEMA was buried in the new Department, causing a loss of visibility, morale and resources. And with some notable exceptions, the leadership of FEMA was typically awarded based on political connections, with no serious commitment to professional experience or passion for the job. As a result, when hurricane Katrina hit the New Orleans area in 2005, FEMA and the national were ill-prepared. The tragic consequences have been amply documented.

We encourage scholars and practitioners affiliated with IRGC to explore the following themes as practical guidance for emerging risk management is developed.

1. The missions of public agencies, and the related legal authorities, should be applied to emerging as well as existing risks.

2. Such agencies should be designed with strong skills in science and engineering as well as the social science disciplines that enrich understanding of human behaviour, values, and communication. An evidenced-based culture can be fostered by strong programs of external peer review and collaborative links to colleges, universities, think tanks and national laboratories.

3. While such agencies must be subject to political oversight, they should be structured with an unusual degree of independence from the day-to-day wishes of elected officials.

4. Public servants need freedom, encouragement, and reward when they analyze and anticipate emerging risks, even though it may be unpopular or threatening to do so. And they must be insulated from undue criticism when they err.

5. Public agencies need to invest in the active warning/surveillance systems that are necessary to detect risks in their early stages of emergence.

Taken together, we believe these five steps will be helpful in developing a stronger risk culture at public agencies.

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Works Cited

Abramson, M. A. and Lawrence, P. R. 2001. "The Challenge of Transforming Organisations: Lessons Learned about Revitalizing Organisations." In M. A. Abramson and P. R. Lawrence (Eds.) *Transforming Organisations*. Lanham, MD: Rowman & Littlefield: 1-10.

Agranoff, R. and McGuire, M. 2003. *Collaborative Public Management: New Strategies for Local Governments*. Washington, D.C.: Georgetown University Press.

Amis, J., Slack, T., and Hinings, C. R. 2004. "The Pace, Sequence, and Linearity of Radical Change." *Academy of Management Journal*, 47: 15-39.

Armenakis, A. A., Harris, S. G. and Field, H. S. 2001. "Paradigms in Organisational Change: Change Agent and Change Target Perspectives." In Golembiewski, R. T. (Ed.). *Handbook of Organisational Behaviour*. New York: Marcel Dekker, Inc.

Aucoin, P. 1990. *The New Public Management: Canada in Comparative Perspective.* Montreal: IRPP.

Bandura, A. 1977. *Social Learning Theory.* Englewood Cliffs, New Jersey: Prentice Hall.

Bandura, A. 1997. *Self-Efficacy: The Exercise of Control*. New York: Freeman.

Bardach, E. 1977. *The Implementation Game*. Cambridge: MIT Press.

Barzelay, M. 2001. *The New Public Management: Improving Research and Policy Dialogue*. Berkeley: University of California Press.

Berman, E. and Wang, X. 2000. "Performance Measurement in U.S. Counties: Capacity for Reform." *Public Administration Review*, 60: 409-420.

Berry, F. S., Chakerian, R. and Wechsler, B. 1999. "Reinventing Government: Lessons from a State Capital." In Frederickson, H. G. and Johnston, J. M. (Eds.). *Public Management Reform and Innovation: Research, Theory, and Application*. Tuscaloosa: The University of Alabama Press.

Bingham, L. B. and O'Leary, R. (Eds.) 2009. *The Collaborative Public Manager: New Ideas for the Twenty-First Century.* Washington, D.C.: Georgetown University Press.

Bingham, L. B. and Wise, C. R. 1996. "The Administrative Dispute Resolution Act of 1990: How do We Evaluate its Success?" *Journal of Public Administration Research and Theory*, 6: 383-411.

Borins, S. 1998. *Innovating with Integrity: How Local Heroes Are Transforming American Government.* Washington, D.C.: Georgetown University Press.
Bowen, D.E. and Lawler, E.E. 1992. "The Empowerment of Service Workers: What, Why, How, and When." *Sloan Management Review*, 33: 31-39.

Bowen, D.E. and Lawler, E.E. 1995. "Empowering Service Employees." *Sloan Management Review,* 36:73-84.

Boyne, G. A. 2003. "Sources of Public Service Improvement: A Critical Review and Research Agenda." *Journal of Public Administration Research and Theory*, 13: 367-394.

Bruhn, J. G., Zajac, G. and Al-Kazemi, A. A. 2001. "Ethical Perspectives on Employee Participation in Planned Organisational Change: A Survey of Two State Public Welfare Agencies." *Public Performance and Management Review*, 25: 208-28.

Burke, W. W. 2010. *Organisation Change: Theory and Practice*. Third Edition. Thousand Oaks, CA: Sage.

Carnall, C. 1995. *Managing Change in Organisations*. New York: Prentice Hall.

Chakerian, R. and Mavima, P. 2000. "Comprehensive Administrative Reform Implementation: Moving Beyond Single Issue Implementation Research." *Journal of Public Administration Research and Theory*, 11: 353-77.

Daft, R. L. 2008. *Organisation Theory and* Design. Tenth Edition. Mason, Ohio: South-Western, Cengage Learning.

Daniel, R. S. 2001. "Transforming the Federal Emergency Management Agency: The Renewal and Revitalization of FEMA." In M. A. Abramson and P. R. Lawrence (Eds.), *Transforming Organisations*. Lanham, MD: Rowman & Littlefield: 57-89.

Denhardt, R. B., and Denhardt, J. V. 1999. *Leadership for Change: Case Studies in American Local Government.* Washington, D.C.: IBM Center for the Business of Government.

Denis, J, Lamothe, L. and Langley, A. 2001. "The Dynamics of Collective Leadership and Strategic Change in Pluralistic Organisations." *Academy of Management Journal*, 44: 809-37.

Edmondson, A. C., Bohmer, R. M., and Pisano, G. P. 2001. "Disrupted Routines: Team Learning and New Technology Implementation in Hospitals." *Administrative Science Quarterly*, 46: 685-716.

Erez, M. 1977. "Feedback: A Necessary Condition for the Goal Setting-Performance Relationship." *Journal of Applied Psychology*, 62: 624-627.

Fernandez, S. and Rainey, H. G. 2006. "Managing Successful Organisational Change in the Public Sector: An Agenda for Research and Practice." *Public Administration Review*, 26: 168-176.
Gallos, J. V. (Ed.) 2006. *Organisational Development*. San Francisco, California: Jossey-Bass Publishers.

Golembiewski, R. T. 1985. *Humanizing Public Organisations*. New York: Lomond.

Gormley, Jr., W. T. and Balla, S. J. 2008. *Bureaucracy and Democracy:Accountability and Performance*. Second Edition. Washington, D.C.: CQ Press.

Greiner, L. E. 1967. "Patterns of Organisational Change." *Harvard Business Review*, 45: 119-28.

Hennessey, J. T. 1998. "'Reinventing' Government: Does Leadership Make a Difference?" *Public Administration Review*, 58: 322-32.

Holzer, M., and Callahan, K. 1998. Government at Work: Best Practices and Model Programs. Thousand Oaks, CA: Sage Publications.

Johnson, G. and Leavitt, W. 2001. "Building on Success: Transforming Organisations through an Appreciative Inquiry." Public Personnel Management, 30: 129-36.

Judson, A. S. 1991. Changing Behaviour in Organisations: Minimizing Resistance to Change. Cambridge, MA: Blackwell Business.

Kanter, R. M. 1983. *The Change Masters*. New York: Simon and Schuster.

Kemp, E. J., Funk, E. J. and Eadie, D. C. 1993. "Change in Chewable Bites: Applying Strategic Management at EEOC." *Public Administration Review*, 53: 129-34.

Kets de Vries, M. F. R. and Balazs, K. 1999. "Transforming the Mind-Set of the Organisation." *Administration and Society*, 30: 640-75.

Kotter, J. P. 1995. "Leading Change: Why Transformation Efforts Fail." *Harvard Business Review*, Mar.—April: 59-67.

Lambright, W. H. 2001. "Transforming the National Aeronautics and Space Administration: Dan Goldin and the Remaking of NASA." In M.A. Abramson and P. R. Lawrence (Eds.) *Transforming Organisations.* Lanham, MD: Rowman & Littlefield: 91-137.

Latham, G. P. and Locke, E. A. 1991. "Self-regulation Through Goal Setting." *Organisational Behaviour and Human Decision Processes*, 50: 212-247.

Lewin, K. 1947. "Group Decision and Social Change." In Newcomb, T. M., Hartley, E. L., and Others. (Eds.). *Readings in Social Psychology*. New York: Holt, Rinehart, and Winston.

Locke, E. A. and Latham, G. P. 1990. *A Theory of Goal Setting and Task Performance*. Englewood Cliffs, New Jersey: Prentice-Hall.
Mazmanian, D. A. and Sabatier, P. A. 1989. *Implementation and Public Policy: With a New Postscript*. Latham, MD: University Press of America.

Meier, K. J. and Bohte, J. 2007. *Politics and the Bureaucracy: Policymaking in the Fourth Branch of Government*. Fifth Edition. Belmont, California: Wadsworth Publishing.

Meyers, M. K. and Dillon, N. 1999. "Institutional Paradoxes: Why Welfare Workers Cannot Reform Welfare." In Frederickson, H. G. and J. M. Johnston. (Eds.). *Public Management Reform and Innovation: Research, Theory, and Application*. Tuscaloosa: The University of Alabama Press.

Mohrman, S. and Lawler, E. 1983. *Quality of Work Life*. Los Angeles: University of Southern California Graduate School of Business, Center for Effective Organisations.

Montjoy, R. S. and O'Toole, L. J., Jr. 1979. "Towards a Theory of Policy Implementation: An Organisational Perspective." *Public Administration Review*, 39: 456-75.

Moynihan, P. D. 1959. "Epidemic on the Highway," *New Yorker*.

Nadler, D. A. and Nadler, M B. 1998. *Champions of Change: How CEOs and Their Companies are Mastering the Skills of Radical Change*. San Francisco: Jossey-Bass.

Nadler, D. A. and Tushman, M. L. 1980. "A Diagnostic Model for Organisational Behaviour." In Hackman, J. R., Lawler, E. and L. W. Porter. (Eds.). *Perspectives on Behaviour*. New York: McGraw-Hill.

Nadler, D. A. and Tushman, M. L. 1989. "Organisation Frame Bending: Principles for Managing Reorientation." *Academy of Management Executive*: 194-205.

O'Toole, Jr., L. J. 1989. "Alternative Mechanisms for Multiorganisational Implementation: The Case of Wastewater Management." *Administration and Society*, 21: 313-39.

Piderit, S. K. 2000. "Rethinking Resistance and Recognizing Ambivalence: A Multidimensional View of Attitudes toward an Organisational Change." *Academy of Management Review*, 25: 783-94.

Rainey, H. G. 2009. *Understanding and Managing Public Organisations*. Fourth Edition. San Francisco: Jossey-Bass.

Rainey, G. W. and Rainey, H. G. 1986. "Breaching the Hierarchical Imperative: The Modularization of the Social Security Claims Process." In Calista, D. J. (Ed.). *Bureaucratic and Governmental Reform*. Greenwich, CT.: JAI Press.

Redwood, S., Goldwasser, C., and Street, S. 1999. *Action Management: Practical Strategies for Making Your Corporate Transformation a Success*. New York: Wiley.
Schein, E. H. 1987. *Process Consultation: Vol. 2. Its Role in Organisational Development*. Second Edition. Reading, MA: Addison-Wesley.

Schein, E. H. 1996. "Culture: The Missing Concept in Organisation Studies." *Administrative Science Quarterly*, 41: 229-240.

Shareef, R. 1994. "Subsystem Congruence: A Strategic Change Model for Public Organisations." *Administration and Society*, 25: 489-517.

Spreitzer, G.M. 1995. "Psychological Empowerment in the Workplace: Dimensions, Measurement, and Validation." *Academy of Management Journal,* 38: 1442-1465.

Suchman, M. C. 1995. "Managing Legitimacy: Strategic and Institutional Approaches." *Academy of Management Review*, 20: 571-610.

Thomas, K.W. and Velthouse, B.A. 1990. "Cognitive Elements of Empowerment: An 'Interpretive' Model of Intrinsic Task Motivation." *The Academy of Management Review,* 15: 666-681.

Thompson, J. R. and Fulla, S. L. 2001. "Effecting Change in a Reform Context: The National Performance Review and the Contingencies of 'Microlevel' Reform Implementation" *Public Performance and Management Review*, 25: 155-75.

Thompson, J. R. and Sanders, R. P. 1997. "Strategies for Reinventing Federal Agencies." *Public Productivity and Management Review*, 21: 137-155.

Tichy, N. M. 1983. *Managing Strategic Change: Technical, Political and Cultural Dynamics*. New York: Wiley.

Tushman, M., Anderson, P. and O'Reilly, C. 1997. "Technology Cycles, Innovation Streams and Ambidextrous Organisations." In Tushman, M. and Anderson, P. (Eds.). *Managing Strategic Innovation and Change.* Oxford: Oxford University Press, pp. 3-23.

Van de Ven, A. H. 1993. "Managing the Process of Organisational Innovation." In Huber, G. P. and Glick, W. H. *Organisational Change and Redesign: Ideas and Insights for Improving Performance*. New York: Oxford University Press.

Vroom, V. H. 1964. *Work and Motivation*. New York: Wiley.

Warwick, D. P. 1975. *A Theory of Public Bureaucracy*. Cambridge, MA: Harvard University Press.

Weissert, C. S. and Goggin, M. L. 2002. "Nonincremental Policy Change: Lessons from Michigan's Medicaid Managed Care Initiative." *Public Administration Review*, 62: 206-216.

Wilson, J. Q. 1989. *Bureaucracy.* New York: Basic Books.

Young, G. J. 2001. "Transforming the Veterans Health Administration: The Revitalization of VHA." In M. A. Abramson and P. R. Lawrence (Eds.) *Transforming Organisations*. Lanham, MD: Rowman & Littlefield: 139-172.

Yukl, G. 2002. *Leadership in Organisations*. Fifth Edition. Upper Saddle River, NJ: Prentice Hall.