

From efficiency to risk sensitivity: reconstructing management capabilities after economic rationalism

Management thinking has, for a long time, been pre-occupied with efficiency. The Efficiency versus Effectiveness debate rarely encompassed consideration of strategic and operational uncertainties associated with risk and crisis management situations. Efficiency, in the form of aggressive least-cost strategies, has continued to dominate management thinking through capture by Economics; particularly by a brand of Economics called Public Choice Theory which has dominated Anglo-Saxon management and public policy schools for some two decades.

From out-sourcing, an over-reliance on 'templating' management consultants, down-sizing and information technology (IT)-driven re-engineering, management action has further focused on short-term efficiency considerations and has exacerbated longer-term susceptibility to vulnerability and crisis-proneness within corporations and public sector agencies alike. The implications for risk and crisis management sensitivities of excessively 'lean' and 'mean' focal organisations continues to go undiscussed, even unrecognised. With an inherent proclivity to simple mechanistic and functionalised thinking, management urgently requires to re-discover uncertainty, complexity, vulnerability and social dynamics in order to render current over-economised management prescriptions more strategically intelligent.

Introduction: from efficiency to risk sensitivities

The neo-conservative ideology of neo-classical welfare economics underscores the linking of public agency efficiency to managerial ability, authority and accountability by the adoption of managerialist private-sector practices (such as strategic planning, re-engineering, customer service, quality assurance, performance management and even accrual accounting), creating what has been described as the 'managerial meta-myth' (Adams and Ingersol, 1990:285). A resultant managerialism is thus defined as the pursuit of result-oriented systems of management, through streamlined processes of decision-making, designed to allow greater autonomy and also greater responsibility for the

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program manager—managerialism stresses efficiency, as against process and equity, advocates private sector management practices in the public sector, shifts accountability from inputs to outcomes and creates a competitive public administration for those agencies responsible for the delivery of services (Uhr, 1990:22).

Managerialism fosters the proposition that 'good organisation results from deliberate intentions, detailed plans and consistent decisions' (Prasser, 1990: 194). Public sector business practices are said to create appropriate structures, processes, culture and incentives to deliver programmes most efficiently operating within outcomes-centred budgetary and accountability systems. The managerial belief is that there is a body of sound, universal management practice applicable to the private sector that, in its generic nature, is also directly transferable to the public sector. In essence, managerialists expect public managers to improve organisational efficiency, so as to reduce costs, while, at the same time, enhanced organisational performance by meeting competing priorities within a political climate that punishes mistakes and rewards risk-averse behaviour, regardless of the costs and effort involved in avoiding unacceptable or intolerable outcomes (Dixon, Kouzmin and Korac-Kakabadse, 1998).

Globalisation, innovation, continuous improvement, organisational networking, technology alignment, growth, mergers, acquisitions, down-sizing, re-organisation, de-layering, re-engineering and work-force profile adjustments—all imply *organisational design*, change and elements of risk management (Korac-Boisvert and Kouzmin, 1995b; 1995c; Kouzmin and Korac-Boisvert, 1995; Kouzmin and Korac-Kakabadse, 1997). These changes are seen as necessary processes in response to prevailing ideological imperatives, managerial

fads, economic climate, technological advances, fluctuating marketplace and fluidity of the work-force. These innovations also take place within a social environment and, as such, are influenced by 'formative context' (Unger, 1987).

Crisis management is clearly one interdisciplinary and inter-agency policy arena of 'wickedness' (Rittel and Weber, 1973: 155–169) needing a considerable *epistemological* breakthrough in governance, policy and planning capacities in developed and developing economies (Dror, 1986; Jarman and Kouzmin, 1993; Kouzmin and Johnson, 1998). In the context of prevailing economic consciousness characterising administrative agencies, whether variants of economic rationalism, privatisation, radical IT-based administrative reform, re-engineering and downsizing have anything to contribute to the theory and practice of crisis governance, enhancing risk sensitivities, decreasing institutional vulnerabilities or improving crisis management capabilities are questions of increasing salience.

In increasingly sophisticated information societies, potential risks from 'normal' accidents, 'soft-core' disasters, 'creeping' crises and cognitive managerial failures are, paradoxically, both more numerous and more obscure than ever before (Cannell and Otway, 1988). The increased crisis potential of organisations and society at large is striking—in the period between 1900 and 1987 there have been twenty-nine major industrial accidents in the world (Shrivastava, 1987), the largest of which having become household names. Tylenol has been the worst case to date of a nationwide product tampering incident. Bhopal was the largest industrial accident in history, Chernobyl the largest nuclear accident and the space shuttle disaster threatened to cancel the entire US manned space program (Mitroff, 1988; Jarman and Kouzmin, 1990; Jarman, 1994). Furthermore, for every one of the headline disasters, there are countless others that do not make the news but could be nearly as devastating to organisations (Mitroff, 1988). Understanding how these *non-routine* situations are manifested, mitigated and then re-constructed relies increasingly on synergistic information and

the inter-disciplinary knowledge of experts (Kouzman and Jarman, 1989; Rosenthal, Hart 't and Kouzman, 1991; Kouzman, Jarman and Rosenthal, 1995).

Large-scale crises are partly the result of unintended and misunderstood interactions between managerial limitations in thought and action and planning constraints in organisational response mechanisms (Kouzman and Jarman, 1989; Mitroff, 1989; Jarman and Kouzman, 1994a; 1994b). Often, control mechanisms, such as *IT-mediated communication*, are not currently up to the task of managing the complex technologies they are supposed to oversee (Mitroff, 1989); especially where inscrutable technological processes are involved with little or no direct experience of recognisable design limitations (Cannell and Otway, 1988; La Porte, 1994; Perrow, 1994; Sagan, 1994). In many cases, the potential for large-scale disaster is built into the very design of complex technologies (Perrow, 1984; Mitroff, 1989; Sagan, 1994), as evidenced by Bhopal, Chernobyl and Exxon Valdez. Although appropriate technologies can help control other complex technologies, they must be adequately integrated with the human side of organisation or the technology control systems, themselves, can lead to crises (Mitroff, 1989; Korac-Boisvert and Kouzman, 1994). Institutional and organisational actors need to become familiar with a whole new range of control and communication technologies if they are to keep pace with the new and expanding field of *vulnerability management* (Wildavsky, 1988). However, the tools, concepts and frameworks must be 'formative context'-sensitive (Ungar, 1987; Kaufmann, 1991; Korac-Boisvert and Kouzman, 1995a; 1995b; Kouzman and Korac-Boisvert, 1995; Kouzman and Korac-Kakabadse, 1997).

Notwithstanding that risk assessment and the repertoire of possible responses to perceived threat are influenced by 'formative contexts', effective communication concerning the magnitude, nature and control of risk is essential to the functioning of society operating on democratic principles (Cannell and Otway, 1988; Wildavsky, 1988). Since the concept of risk (representations of the probability of undesirable physical and socio-political consequences) has a different meaning in different contexts and because communication occurs in different forms before, during and after crisis situations, being crucial for crisis management, risk/crisis communication must take into account the knowledge and experience of the audience it addresses as well as the formative context. Some scholars have argued that, more often than not,

a crisis situation is, 'to a large extent, an *information and communication crisis*' (Pearson and Mitroff, 1993; Garnett and Kouzman, 1995), where a key variable in determining vulnerability to crisis is communication (Pearson and Mitroff, 1993). Pearson and Mitroff (1993) further contend that crisis-prone organisations tend to miss or ignore signals indicating potential weakness in operations or structure and that, in some cases, crisis-prone organisations even exert considerable effort to *block* warning signals.

Furthermore, experience with disaster-related strategic planning and operational forecasting often have a degree of managerial problems (Garnett and Kouzman, 1995); much of conventional thinking about planning, policy design, implementation and governance (Kaufmann, 1991; Kouzman, 1992) being made more difficult by socio-technological change and an ever increasing repertoire of crisis experience rendering the understanding of crisis planning and communications problematic (Garnett and Kouzman, 1995; Kouzman, Jarman and Rosenthal, 1995; Kouzman, Sainsbury and Jarman, 1995).

The practical challenge for designing vulnerability audits and crisis-relevant communications is to promote public understanding of, and appropriate responses to, actual hazards in instances of:

- the aftermath of 'normal' accidents (Three Mile Island, Bhopal, Chernobyl) (Perrow, 1984; Shrivastava, 1989; Sagan, 1994).
- the mitigation of 'soft-core' disasters (such as corporate failures and IT development fiascos) (Korac-Boisvert and Kouzman 1994; 1995a; 1995b; Kouzman and Korac-Boisvert, 1995);
- the prevention of routine response situations in the face of new risks and the occurrence of the 'creeping' environmental crises (Jarman and Kouzman, 1994a; 1994b) and "chronic" situations such as in-effectual re-engineering of institutions (Korac-Boisvert and Kouzman, 1995b; 1995c); and
- prevention of cognitive failures in policy design (governance or a choice of a new technology policy) (Dror, 1987; Jarman and Kouzman, 1993; Korac-Boisvert and Kouzman, 1995b).

Organisational design parameters in a global IT dynamic

The dynamic aspect of IT may be conceived as a process of increasing complexity in the organisational landscape (Ahrne, 1990) within which organisational actors must act. The kind of IT employed influences the patterns of independencies within the

organisation and, hence, the power relations between different actors and groups in the organisational landscape (Morgan, 1986; Ahrne, 1990). New IT creates possibilities of multiple points of access to common data bases and the possibility of local, rather than centralised, information systems (Boettinger, 1989). This, in principle, can increase the power of those at the periphery or local level by providing actors with more comprehensive, immediate and relevant data relating to their tasks, thereby facilitating self, rather than centralised, control (Korac-Boisvert and Kouzman, 1994).

In practice, IT is often used to increase power (at the centre) by decentralizing certain activities while centralizing ongoing surveillance over performance (Morgan, 1986; Huber, 1990). In either instance, with increased centralisation of managerial power or, alternatively, with greater de-centralisation of managerial power depending on the intent of the organisation's strategy (Huber, 1990), IT has an effect on leadership roles and organisational design. Significant IT advancement eventually leads to the recognition of an implementation of new organisational design options (Boettinger, 1989; Forester, 1989; Korac-Boisvert, 1993; Limerick and Cunnington, 1993). For example, IT communication links, based on an e-mail or bulletin board-type infrastructure, facilitate communication between non-linearly-connected actors and increase the level of coupling between previously uncoupled entities in a 'network structure' (Malone, Yates and Benjamin, 1987; Johnson and Lawrance, 1988; Boettinger, 1989; Korac-Boisvert and Kouzman, 1994).

Information technology and telecommunications linked together increase the emphasis on value-added services such as local and wide-area computer networks, electronic mail and video or teleconferencing, as well as electronic funds transfer at point of sale (EFTPOS) and interactive database services. The new generation information technology has increased transmission speed, quality and, often, reduced costs. To capitalise on these new facilities, providers have had to combine resources through loose associations, alliances and acquisitions. For example, new forms of inter-organisational links, represented by coordinated contracting, coordinated revenue links, joint ventures, co-making and spot-networking, have now emerged. Some of these extend across national boundaries, notably in aerospace and automotive production, while in others, these new linkages increasingly form the central core of the industrial system.

These new patterns of interaction are as much *processes* as they are emerging *structures*; being continually shaped and re-shaped by the actions of actors who are, in turn, constrained by the structural position in which they find themselves within a social space and time (Korac-Boisvert and Kouzmin, 1994; Kouzmin and Korac-Boisvert, 1995). Sometimes these changes are clearly demonstrated by organisational restructuring. At other times, the changes occur very slowly, more in substance than in form. Whatever the mode of alteration, however, the process of re-design will be accompanied by periodic or evolving changes in the types of organisational structure. However, these changes do not inherently imply organisational democratisation. Often they are only pseudo-devolved structures, where strategic control is centralised at the same time as operational decision-making is being decentralised; replacing top-down power relationship with a centre-periphery one which is less easily recognised (Huber and McDaniel, 1986; Kouzmin and Korac-Boisvert, 1995).

The proliferation of new IT that facilitates cross-functional and intra-functional integration (Boettinger, 1989), or 'networks' (Powell, 1990), creates changes in the leadership role and in hierarchical differentiation. Leaders are faced with making the difficult call between what is local to their function and what is global to the business - to differentiate decisions that are operational for their tasks and strategic for the organisation. The increase of stakeholders and, thus, inter-dependencies, creates a need for the increased sharing of tasks, information, roles and decision-making accountability (Boettinger, 1989; Fairholm 1991). These, in turn, produce changes in the planning and operational parameters, further promoting a need for leadership interaction with a wider range of stakeholders within the organisational landscape. Furthermore, IT provides *real-time information*, generating a more rapid and frequent need to adjust to new situations. With actors' growing awareness, IT development and distributed decision-making accountability over a wide variety of organisational stakeholders, a mutation of traditional managerial prerogatives is likely to occur.

The IT potential to transform hierarchical organisations into 'information-based organisations' (Drucker, 1988, 1990a) or 'network organisations' (Powell, 1990) is at least four-fold. First, IT makes possible the reduction of management levels by providing a dramatically enhanced potential for control (Beniger, 1986). Secondly, network

structures facilitate fluid, flexible and dense patterns of inter-connections that cut across various intra- and inter-organisational boundaries (Drucker, 1988, 1990). Thirdly, IT provides real-time communication across social time and space (Sproull and Kiesler, 1991a). IT also improves communication between systems, thus blurring the boundaries of organisations beyond market or hierarchical exchange (Malone and Rockhardt, 1991). Fourthly, IT contributes to flexibility through electronic storage and data manipulation (Walton, 1989). Emerging 'network organisations' (Powell, 1990) are characterised by relations that are based on neither authority nor market transactions (Powell, 1990), but on the network structure of ties (relationships) among actors in a social-context. As such, they are radically different from the Weberian bureaucracy (Baker, 1992; Nohria and Eccles, 1992) and effective vehicles for enhanced *inter-agency* capacities in crisis management and responsive strategies.

While bureaucratic organisations are created in response to particular problems, networks are not necessarily built around an identity of interest; rather, the requirement is that there be a basis for some form of mutually beneficial exchange (Morgan, 1986). Furthermore, bureaucracies attempt to resolve the tension between actor's obligations to perform tasks with universalistic principles and particularist relationships, while networks must be able to combine the virtues of universalism with those of particularism (Heimer, 1992). The currency of network building is one of mutual dependency and exchange (Morgan, 1986; Kouzmin and Korac-Boisvert, 1995). Network actors are positionally—or *structurally*—proximate to the extent that they occupy the same roles and, thus, share sets of obligations, status and expectations (Burt, 1982) through the pattern of relationships, both present and absent, achieving structural equivalence and organisational proximity (Hartman and Johnston, 1989). The network's structural equivalence facilitates the participants to talk more openly, candidly, without fear and to build trust (Davis, 1991; Galagan, 1992).

IT facilitates that process and makes it more accessible to a more diverse range of actors; reflecting wider potentialities. While the nature, degree and conditions of its effects remain problematic, IT has been shown to affect structure, shape interactions and influence the personal characteristics of organisational actors (Hunt, 1973; Kouzmin, 1980a; 1983; Korac-Boisvert and Kouzmin, 1995a; 1995b; Kouzmin and Korac-Boisvert, 1995). IT influences

social life in both material and discursive ways.

While materially IT increases the potential for a wide range of data gathering, storage and processing, to the extent of *data overload* or *soft-core crisis* (Korac-Boisvert and Kouzmin, 1995a; 1995b; Kouzmin and Korac-Boisvert, 1995), its discursive presence, particularly in relation to the centralisation or decentralisation of the social life, is an on-going debate (Forester, 1989). An organisational network, supported by IT, has the ability to collapse problems of time and space through electronic mail (Crawford, 1982; Nyce and Groppa, 1983; Sproull and Kiesler, 1991a) and video-conferencing (Fulk and Dutton, 1984). For example, IT enables both the simplification of internal structures, by reducing the number of hierarchical levels, and the re-integration of critical external dependencies and agencies which, together, lead to a blurring or re-definition of existing organisational boundaries (Keen, 1991; Malone and Rockhardt, 1991; Scott-Morton, 1991; Venkatraman, 1991). IT makes it possible to reduce the No. of management levels in the hierarchy since processing of information up and down the organisation is no longer needed (Korac-Boisvert and Kouzmin, 1995a; 1995b). Although, the reduction of management levels reduces the levels of structure separating senior executives from employees (Beniger, 1986), IT may greatly increase the span of control, especially in routine situations (Kouzmin, 1983).

The adoption of new IT has an impact on organisational design and relates to the core functions of an organisation in its symbolic, sanctional, international and social aspects (Forester, 1989; Powell, 1990; Korac-Boisvert and Kouzmin, 1994; Kouzmin and Korac-Boisvert, 1995). Furthermore, IT is linked to personal dimensions such as morality, purpose and meaning. How well the organisational roles are re-defined will depend on the type of organisational design choice which, in turn, depends on human, socio-cultural and economic factors as well as the perceived real benefits (Boettinger, 1989; Korac-Boisvert and Kouzmin, 1994). Thus, the outer most significance of IT choice is not methodological in any narrow sense but also moral (Apter, 1965).

Economic rationalism: reviving simple functionalism in management

The highly bureaucratic management model, as evolved from the manufacturing industry, has dominated management and administrative philosophy this century

(Kouzman, 1980a; 1980b; 1983) and, at same time, facilitated organisational growth based on high-volume, low-cost strategies for more than 50 years.

In the US, for example, big business preceded, at least coincided with, the welfare state (Adams, 1992). Unionism, job security and worker participation were strenuously opposed. The artificial separation of 'thinkers' from 'do-ers' resulted in lower quality and productivity, chronic absenteeism and in-difference (Reich, 1989; 1993). In an attempt to up-grade management as a means of increasing productivity, Anglo-American praxis adopted concepts of quality circles, work groups, encounter groups and teams, without, however, fundamentally changing underlying organisational assumptions. These attempts were exemplified by *Theory Z*, or how American business could meet the Japanese challenge (Ouchi, 1982), and 'how to' books in the 'best' US tradition (Pascale and Athos, 1981). However, these adaptations could not meet operational praxis while business was dominated by professional managers indoctrinated with traditional coercive management theory (Kouzman, 1983; Kouzman and Jarman, 1989).

Two major categories of management practice and institutional arrangements are instrumental in producing functionalist outcomes favoured by management: on the one hand, practices and arrangements that affect the social organisation of production; on the other hand, practices and arrangements that, at the same time, give rise to particular labour-management relationships (Nurse, 1988). The former deal with the structural organisation of production— departmentation, hierarchy, the establishment of job boundaries, work roles and rules, the use of different kinds of technology, production methods, and so on. The latter deal with the organisation of labour power itself and the features of an organisation's internal and external labour market, performance evaluation and promotion policies, supervision and systems of discipline, compensation structures and management.

Organisational theorists, of course, differ in terms of their assessment of the nature of, and rationale for, the use of such mechanisms and praxis, economists do not. Such differences in outlook are not the product of idiosyncratic thought. They reflect the influence of the fundamental assumptions that structure and inform social theory and research. Functionalist organisation and management theory and research constitute a distinctively dominant intellectual enterprise when contrasted

with work located within other paradigms. This body of work is concerned with 'functional rationality', disciplined permanence, efficiency and profitability. As such, it views managerial action in a highly instrumental fashion (Kouzman, 1980a; 1980b; Nurse, 1988; Reich, 1993). It assumes that the task of managing can best be accomplished if organisational roles are appropriately 'engineered', allocated and coordinated. To effect these outcomes, and as a means of promoting disciplined performance, structural patterns, institutional arrangements, rules, procedures and administrative practices all work towards a *least-cost* goal accomplishment. These practices and institutions constitute the basis of organised action and, at the same time, act as obstacles to innovation and learning. They are the *sine qua non* of organizing activity in a functionalising economic rationalism.

Organisation action that is geared towards managerial outcomes is theorised in purely functionalist, increasingly economically rationalist, terms. Functionalist theorists argue that the forms it takes are both indispensable and inevitable, as they are seen as being limited by the size of the organisation, the nature of its technology, vertical and horizontal configuration and the need to manage the 'business of management' (Kouzman, 1980a; 1980b; Nurse, 1988; Reich, 1993). Such an approach to organising and, by inference, such a concept of management's role, leads organisation analysts to theorise the structural and internal labour market features of organisation in terms of contributions to goal accomplishment (Georgiou, 1973), organisational stability and rationality; albeit technical rationality (Kouzman, 1980a; 1980b; 1983).

For example, one of the more enduring myths of organisational theory is that a formal hierarchy of authority is indispensable for coordination (Kouzman, 1983: 237). The assumption that hierarchy is a functional and technical pre-requisite for organisation complexity (Wilson, 1975) still persists today. Possible irrationalities attributable to hierarchical control are looked upon as inevitable costs of complex organisation, ones that may be considerably reduced through the rhetoric of delayering, out-sourcing and re-engineering, but not eliminated (Kouzman, 1983; Kouzman and Jarman, 1990; Korac-Kakabadse and Kouzman, 1996; Kouzman, Korac-Kakabadse and Jarman, 1996).

Growing numbers of academics and practitioners recognise that this functionalist, and now increasingly economicist, legacy of prescriptive, engineered and

consensus-oriented, rationalistic administration does not conform with empirical reality. Nor does it sit easily with the ideological canons of liberal, participatory democracy (Urban, 1978; 1982; Thompson, 1981; Rosenthal, 't Hart and Kouzman, 1991). The organisational design advantages of complexity, redundancy, duplication, overlap and conflict (Kouzman, 1980b; Lerner, 1986; Kouzman, Korac-Kakabadse and Jarman, 1996) have now been extensively elaborated and the notion of polycentrism is not only being tolerated but increasingly being insisted upon as a realistic alternative to centralist and coercive bureaucratic administration (Chilson, 1990; Kouzman and Scott, 1990).

Under functionalist perspectives, actors employ a particular brand of metaphor and language of discourse that speaks of the need for regulation, order, integration and stability (Wilson, 1975). The *machine* and *organic* metaphors structure modes of inquiry into organisational phenomena. The manager's role is cast in terms of either a 'structural' or 'social' engineer, or both. Work structures and practices are regarded as rational, objective means for attaining highly-valued organisational and social goals, independent of the structure, ownership or control issues in wider society. These structures and praxes are assumed to constitute universal principles of globalising organised action. Functionalist and economicist organisational perspectives assume a largely 'passive' role for employees and highly 'pro-active' ones for managers. The role of the former is determined by the latter.

Even the doctrine of devolutionism denies that there is any organisational politics, and the loosely woven net imagery supports this because it is difficult to identify the power centre (Korac-Kakabadse and Kouzman, 1997b). However, in praxis, devolutionism depends on the powerful, but indirect, regulatory mechanisms of corporate culture, incentive structures and management information systems. Through these three mechanisms, strategic centralisation (at the same time that operational decision-making is being decentralised) leads to praxis that is usually no more than pseudo-devolutionist (Muetzelfeldt, 1992; Korac-Boisvert and Kouzman, 1995a). Organisational politics continue but follow new and less visible trajectories. Thus, in the conjuncture of organisational theory, economic rationalist ideology and information technology, each contributes to coercive discourse and praxis through which control is produced and reproduced (Muetzelfeldt, 1992; Kouzman, Korac-Kakabadse and Jarman, 1996).

Structural-functionalist and, lately, economic approaches to organisation introduce many kinds of assumptions, concepts and models for describing a social system that often has *never* existed and is not likely to come into being (Dahrendorf, 1968). Changing a legacy of positivistically-inclined functionalist administrative theory requires shifting paradigms and shifting these paradigms means fundamentally changing the epistemological assumptions and ontological values that lie at the centre of contemporary managerialism today. Contrary to long-shared hopes that organisational and administrative theory have, at last, witnessed conceptual plurality, an epistemological tension, under economic rationalism, such theory has yielded, it seems, to the globalised economic imperative of a 'New Functionalism'.

Economic models in which productivity inherently assumes a manufacturing connotation of the low-cost production of physical products may not have the same relevance in the information-age where the focus is not on the low-cost production of information but its transmission and interpretation (Korac-Kakabadse and Kouzmin, 1997; Kouzmin and Korac-Boisvert, 1995a). The critical scarce resource is knowledge—composed of information, intelligence and expertise. Unlike capital, knowledge is most valuable when it is controlled and used by those at the front line of the organisation, that is, at 'grass roots' levels. In the 1990s, knowledge is the primary resource for individuals and for the economy overall while the traditional economic factors of production become secondary (Drucker, 1990a; 1990b). Many corporate leaders perceive that the challenge lies in harnessing the power of data processing when it really lies in understanding IT's potential for developing and defusing knowledge as a source of competitive advantage. They manage information the way they manage capital, as a scarce resource, collected, stored and allocated arbitrarily (Bartlett and Ghoshal, 1995).

The vulnerability of 'lean' and 'mean' organisations

'Buffering', or the notion of sealing off environmental influences, is construed as an intervening mechanism that insulates an organisation from critical environmental disturbances (Thompson, 1967: 19). Both resource-based buffering and institutional buffering insulate the 'core' technology from disturbance in the organisation's task environment (Thompson, 1967; Aldrich, 1979; Kouzmin, 1983).

Resource-based buffering refers to insulation based on access to material resources, information or technology and may arise from a variety of factors, including inter-organisational arrangements, government support, assistance from social or political elites (Aldrich, 1979) or access to outside financial resources and information networks (Quinn, 1980). Institutional buffering, in contrast, refers to the insulation organisations have through legitimacy or legislation (Peres, 1968), which can arise from prior compliance with general social expectations, professional norms or government regulations (Aldrich, 1979) and from identification with, and protection of, organisational values that already carry high legitimacy (Selznick, 1957; Peres, 1968; Galaskiewicz, 1985).

Downsized, restructured or re-engineered organisations without buffering mechanisms and perceived as especially 'lean', make up a 'refined risk set' because they are more at risk from immediate failure, having optimised minimal cost parameters for on-going *routine* performance—a form of 'corporate anorexia' (Scott, 1995: 27). The social dimension in the lean organisation is especially crucial because the type of coordinated action is often more non-routine than in the buffered organisation (Perrow, 1967). Lean organisations, however, still need to be novel and imaginative in volatile, uncertain and changing environments perceived as confronting the organisation (Thompson, 1967). For this kind of coordinated action, actors must act under conditions of ambiguity of both purpose and means to achieve ends (Hackman and Morris, 1978; Kouzmin, 1980a; 1983).

Furthermore, in situations where there is an absence of organisational 'slack', hidden reserves of 'fat', 'cushions' or resources that are not intentionally concealed but built into the structure of organisational technology ('buffers'), any additional disturbance in the form of further resource cuts or 'normal' accidents that one part of the organisation may be able to absorb, at least for a time, can spell a quick dis-integration for another part of the organisation (Hood and Meg Huby, 1988). Lean organisations are especially *vulnerable* to crises, especially ones where technology imposes an on/off threshold (outputs are nil if inputs drop below a certain level); where there can be no buffer stocks between production capacity and demand; where fixed recurrent expenditures are high in relation to total budget; and where the work cycle is short.

Depletion of buffering capacity through re-engineering, downsizing or delayering

produces the 'survivor's syndrome'—low morale, lack of trust and a decline in commitment to the organisation amongst 'survivors' (Brockner et al, 1993; Cascio, 1993; Korac-Boisvert and Kouzmin, 1995c). These outcomes have multiple and ripple effects on virtually every aspect of business or agency activity as survivors find themselves in 'new, and not necessarily friendly, environments' (Cascio, 1993: 95). As a result, the terms of the 'psychological contract' in the "lean" organisation are fundamentally altered (Cascio, 1993: 103; Korac-Boisvert and Kouzmin, 1995c; Korac-Kakabadse and Kouzmin, 1997a). Worry-laden actors, with low self-esteem, direct their motivation to keeping their jobs, not to achieving inter-organisational goals so vital in crisis management response capacity (Brockner et al, 1993; Hequet, 1995; Korac-Boisvert and Kouzmin, 1995c). If such conditions and exposure to high levels of uncertainty are left unattended for a prolonged period of time, actors undergo a changed 'world-view' (Erikson, 1994), often leading to a mistrust of organisation and manifested in the fostering of conservative, inward-looking management styles which act in a counter-entrepreneurial drive. Alternatively, there develops an institutional insensitivity to longer-term organisational requirements which, with time, can lead to 'creeping crises' (Kouzmin and Jarman, 1989; Jarman and Kouzmin, 1990; 1994a; 1994b).

For example, the American Management Association's survey of downsizing in 1993 found that 80 per cent of surveyed organisations that had down-sized reported decreased employee morale; 13 per cent reported no change in employee morale; and 2 per cent reported increased morale (Fillipowski, 1993). Similarly, an Australian study found that 95 per cent of organisations that had undertaken structural changes through 're-engineering' had not achieved projected benefits (Saker, 1995).

Accomplishing *coordinated* action in lean, inter-agent-oriented organisations means a more critical

role for social structure, trust and personal engagement (Kiesler, Seigal and McGuire, 1984), all requiring *quality dialogue* and increased *face-to-face* interaction. Extra resources and slack that normally insulate the firm or agency in periods of dis-continuous transformation (Galbraith, 1973), redundancy mechanisms and capacity for adaptation are not available to lean organisations. In crisis, change and turbulence, lean organisations cannot utilise concurrence of design (Kouzmin, 1980b), where both old and new ways of doing things can co-exist, because

such processes require *additional* resources in order to maintain performance, reliability or safety (La Porte, 1994; Perrow, 1994; Sagan, 1994).

Inter-organisational linkages in de-layered (lean) organisations may reduce vulnerability to environment uncertainty by providing the required extra resources between inter-dependent units but, at other times, may also simultaneously create vulnerability if two units are competing for the same (limited) resources with equally important priorities in the network of inter-organisational linkages.

IT-Mediated communication versus dialogue for crisis organisations

Considering that IT-mediated communication is increasingly gaining acceptance at all levels of organisations and that such utilisation has potential for changing group and inter-organisational interaction (Sproull and Kiesler, 1991b; Korac-Boisvert and Kouzmin, 1994), *audits* of how IT communication affects group and organisational outcomes, especially since IT actually supports the communication process rather than the decision process itself (Pinsonneault and Kreamer, 1990), become of crucial importance, especially in crisis management contexts.

Although, overall, IT-mediated communication has the propensity to increase participation and decision time at lower cost (in terms of time and effort) (Turoff and Hiltz, 1982), it also has the potential to decrease cooperation and confidence in decisions (Pinsonneault and Kreamer, 1990; Sproull and Kiesler, 1991b). IT-mediated communication produces intangible impacts such as the potential to increase task focus, significantly reduce people's inhibitions and, in new groups (born in electronic *vitro*), equalise participation (Siegel, Dubrovsky, Kiesler and McGuire, 1986; DeSanctis and Gallupe, 1987; Dubrovsky, Kiesler and Sethna, 1991; Weisband, 1992; Korac-Boisvert and Kouzmin, 1994; Kay, 1995). Thus, IT-mediated communication appears to remedy several of the dys-functional psychological and group communication processes in new groups (Rutter, 1987) by promoting a more task-oriented focus, with proportionally more discussion time devoted to the problem at hand and less to social maintenance. Its less personal and confrontational nature provides a 'cooling' effect on conflict with the focus on ideas and issues, rather than personalities (Dubrovsky, Kiesler and Sethna, 1991; Weisband, 1992).

On the other hand, IT-mediated communication may also have de-stabilising effects on established groups (Turoff and

Hiltz, 1982), as relatively stable status structures (Shaw, 1982) change rapidly by manipulation of individual and group feedback (Smith, 1972) or member's task-specific abilities (Watson, DeSanctis and Poole, 1988). Vigorous debate within a more de-personalised atmosphere of IT communication (e-mail, electronic meetings) usually leaves members of new electronic groups less cohesive, less confident and supportive of group decisions (Waston, DeSanctis and Poole, 1988; Pinsonneault and Kreamer, 1990). IT inherently lowers capacity to transmit subtle messages of communication and lower group cohesiveness can lead to decreased cooperation, which also decreases opportunities for organisational actors to clarify inaccurate perceptions as negotiation proceeds (Fisher and Ury, 1990; Fells, 1993).

The absence of direct visual contact can promote aggressive behaviour and can lead groups to take *riskier* or more *extreme* positions (Shah, 1990). IT-mediated communication provides a 'lean' channel of communication as it eliminates a wide range of visual and verbal cues which, in negotiations, may result in a reduced ability to transmit valuable, even critical, task information regarding priorities and preferences (Shah, 1990; Sproull and Kiesler, 1991b; Korac-Boisvert and Kouzmin, 1994; Arthur, 1995). The unusual capacity of face-to-face dialogue to capture the entire spectrum of human interaction (multiple cues), its opportunity to interrupt and repair relationships, as well as to elicit immediate *feedback* and *learning*, are lost in IT-mediated communication (Goffman, 1963; Trevino, Lengel and Daft, 1987), leaving especially public sector and crisis-mediating agencies increasingly vulnerable (Korac-Boisvert and Kouzmin, 1995a; 1995b).

Due to its unique capacity in establishing and maintaining multi-dimensional and *resilient* relationships (Schlenker, 1980; McKenney, Zack and Doherty, 1992), face-to-face dialogue is often the choice for difficult and ambiguous dialogue (McKenney, Zack and Doherty, 1992) and specific personal relations in networking (Granovetter, 1985; Korac-Boisvert and Kouzmin, 1994).

In situations and relationships that call for high levels of trust, IT is conceptualised as a support mechanism and not a substitute for face-to-face dialogue (Nohria and Eccles, 1992; Korac-Boisvert and Kouzmin, 1994). Robustness and trust, critical to quality of dialogue, are severely weakened in IT-mediated communication. Lying, fraud, sabotage and other anti-social

actions are harder to detect in IT-mediated exchanges (Korac-Boisvert and Kouzmin, 1994). Without the full benefit of face-to-face communication, it is almost impossible to recognise whether actors are being profoundly sincere or totally deceptive (Stone, 1991). For example, increased white-collar crime and other 'soft core' (Kouzmin and Korac-Boisvert, 1995) and 'creeping' crises (Jarman and Kouzmin, 1990; 1993; 1994a; 1994b) illustrate cases in point.

'Lean' communication within 'lean' organisations

Although the 'cooling' effect of the 'lean' IT communication medium can enhance conflict management and strengthen support by keeping the expression of emotionality at a more moderate level (Rice, 1984; Poole, Holmes and DeSanctis, 1991), it can be unsuitable for consensus building on highly equivocal tasks (Daft, Lengel and Trevino, 1987) such as competing for scarce resources within organisations with lean-buffers or inter-agency driven crisis mitigation efforts (Comfort, 1993; 1994). Although dialogue is more 'egalitarian', it is also more 'dis-organised' (Williams, 1977), as its openness makes it difficult to resolve issues and establish who has authority to make critical decisions. Furthermore, the spatio-temporal distance that IT interaction provides can lead to an open display of anger and escalating conflict or 'flaming' behaviour (Kiesler, 1986; Solomon, 1990). Thus, IT-mediated dialogue can help in enabling information flows useful for mobilising action (Comfort, 1993), but face-to-face dialogue is vital to actually taking action (Nohria and Eccles, 1992: 297; Korac-Boisvert and Kouzmin, 1994) and reducing potential organisational vulnerability. As the amount of IT-mediated communication increases, there is a need for a corresponding increase in the amount of face-to-face dialogue in order to maintain and build robust social infrastructure of relationships between actors (Nohria and Eccles, 1992: 297; Korac-Boisvert and Kouzmin, 1994). One mechanism for improving quality of interaction and dialogue is *feedback* (Kakabadse, 1991).

In the organisational setting, communication is the mutual exchange of meanings between active participants. Complex organisations consists of many social and cultural groupings and communication between them is likely to involve not only shared meanings but also contradictory and contested ones, thus requiring value and conflict resolution (Selznick, 1957) as well as quality dialogue (Kakabadse, 1991).

Further, participants in communication may be equally active in (re)producing meanings, but they frequently do so from positions of unequal power (Korac-Kakabadse and Kouzmin, 1997a). For example, in most contemporary liberal-democratic societies, an actor's access to information and ideas can often depend on class, gender, age and ethnicity (Korac-Kakabadse and Kouzmin, 1997a). Similarly, in organisational settings, actors' access to information and ideas can often depend on their position within organisation and networking opportunities. Thus, quality dialogue is a resonance between the beliefs and cultural experiences of the participants, expressed through a shared familiarity with the *codes* in use (Kouzmin, Leivesley and Carr, 1997).

While managers should take advantage of emerging electronic and telematic technologies, they should use them in *addition* to face-to-face dialogue. Technology is only a support mechanism and not a substitute for personal contact (Korac-Boisvert and Kouzmin, 1994). Empirical studies show that some of the best communicators spend about 40 per cent of their time in face-to-face encounters, only because they do not have more time to give (Rice and Aydin, 1991). Irrespective of how actors develop, feedback is required to help individuals be more responsive to addressing *contingencies* within organisational contexts (Kakabadse and Myers, 1995a; 1995b), enabling them to negotiate and share understanding of contexts and, thus, through learning, transcend proclivities for 'cognitive failures' (Kouzmin and Jarman, 1989; Kouzmin and Korac-Boisvert, 1995).

Uninformed organisations overly sensitive to 'other-oriented' managerialist actions (Kouzmin, Dixon and Wilson, 1995) are vulnerable to threats from the outside and missed opportunities within (Barnard, 1938; Selznick, 1957; Peres, 1968; Wick and Leon, 1995). In learning organisations, information flows with speed and honesty between all organisational actors. Openness is a linch-pin of an organisation's ability to scan and position itself in market and political space. By equalising the power between leader and followers, leaders are often able to gather information about what really is going on instead of what they hope might be going on in organisations. Learning organisations structure themselves and utilise IT in a way that speeds the flow of internal information. They create cultural norms that place a high value on honesty, even in the face of difficulties. Instead of covering up problems, learning organisations make problems visible in order to

encourage participation in finding solutions quickly (Wick and Leon, 1995).

Vulnerability management, on the other hand, requires of leaders long-range planning capabilities, strategic policy making capabilities, high-quality generative learning and new ways of policy reasoning sensitive to 'formative contexts' (Dror, 1987; Unger, 1987; Garnett and Kouzmin, 1995; Korac-Kakabadse and Kouzmin, 1997a). These crisis-specific capabilities and requirements are, however, continually limited 'by micro-issues dependent, in the main, on an economic rationality—one lacking historical and comparative depth, ignoring psychological and communicative factors and suffering from additional features such as limited and simplistic notions of rationality which make policy and planning in governance and crisis communication contexts narrow' (Dror, 1987: 92).

The reasons for 'creeping' crises occurring and the conditions under which they are likely to occur have largely gone unidentified by many organisations, especially public agencies (Rosenthal, Hart 't and Charles, 1989; Kouzmin and Jarman, 1989; Jarman and Kouzmin, 1990; 1994a; 1994b; Kouzmin, Dixon and Wilson, 1995). Although many creeping crises may be justifiably explained as the result of misperceptions of context, inter-agency default, incompetence, improper socialisation, lack of leadership understanding (Selznick, 1957), employee intransigence or other non-rational determinants, in some cases 'creeping' crises can be associated with the contextual conditions in which problematic workplace and organisational design and jurisdictional allocation occurs (Kouzmin and Jarman, 1989; Rosenthal, Hart 't and Kouzmin, 1991). Many organisations are un-aware of their vulnerabilities to 'normal' accidents, 'softcore' fiascoes and 'creeping' crises *contextually* and *managerially* defined.

Many of these un-thinkable events (Hewitt, 1983: 10), although not all preventable, require the stimulus of organisational vulnerability audits in order to *develop* leadership strategies and organisational designs for effective coping and building resilience to crisis (Wildavsky, 1988). Complex organisations often create the crisis they face in the 'special sense that the kinds of early warning, prevention, damage limitation, recovery and learning mechanisms they institute are the most important factors affecting what kinds of crises will occur' (Mitroff, 1988: 20). Because actors adjust their perception of environmental uncertainty to match their own level of tolerance for ambiguity, mildly discrepant

information is incorporated into actors' perception (McCaskey, 1974).

Unless agency leadership adopts active action plans to anticipate the *inter-agent* and internal antecedents of creeping and latent crises, they are unlikely to perceive the beginning of possible decline. In crisis situations, organisations will attempt to learn and adjust to return to the 'original' state of operations—single loop learning, instead of learning how to prevent critical incidents precipitating crisis processes - generative or double-loop learning (Argyris, 1982). Vulnerability audits and proactive crisis management sensitivities require sophisticated reconstructive policy logics (Kouzmin and Jarman, 1989; Jarman and Kouzmin, 1990) and institutional leadership behaviour (Selznick, 1957) rather than managerial or executive action (Barnard, 1938)—leadership here conceived as critical reflection and critical action within the dialectic of enactment, structure and power in critical events.

Conclusion: towards effective vulnerability management

Administrative reform, around the world, is increasingly dependent upon IT transformations (Estabrooks, 1995; Kouzmin, Korac-Kakabadse and Jarman, 1996). Issues of departmental self-regulation and contract management, financial management, information management, networking, de-centralisation and privatisation have come into existence, in part, because of enhanced IT capacities. Information management, for instance, has become necessary because current IT provides so much diverse information that central coordination, collection and supervision is needed. Networking is a development which, because of the assistance of IT, has become more wide-spread in and between organisations.

The central feature of these administrative reforms is the separation of policy conception and its implementation. The political decision-maker is, in reality, linked to administration, now built up of competitive agencies, via service contracts. This political agency construction leaves little room for mutual adjustment and learning, especially in the policy-sensitive area of IT system development for crisis management capabilities (Korac-Boisvert and Kouzmin, 1995a; 1995b).

The administrative reform movement, in turn, has led to the proliferation of networks within organisations. Although networks possess a number of positive aspects, outlined above, they carry a number of negative aspects, articulated here as the potential of fraud, sabotage and

the inability to facilitate trust and dialogue in crisis situations (Korac-Boisvert and Kouzmin, 1994).

Thus, globalisation and the IT revolution have helped spawn radical transformations of increasingly *vulnerable* administrative systems (Rosenthal and Kouzmin, 1996; Korac-Kakabadse and Kouzmin, 1997b). These reforms have been buttressed by an ideology of economic rationalism (Kouzmin, Leivesley and Korac-Kakabadse, 1997; Dixon, Kouzmin and Korac-Kakabadse, 1998; Korac-Kakabadse and Kouzmin, 1998). Traditional public administration, seen through the prism of IT-driven process re-engineering, urgently requires to review some of its prescriptive and behavioural canons of public administration (Dixon, Kouzmin and Korac-Kakabadse, 1998; Korac-Kakabadse and Kouzmin, 1998). The emergence of 'virtual' accountability, as a result of largely misunderstood or ignored IT developments, creates new IT-behavioural issues and problems at the top as well as the bottom of public sector agencies. At the top, IT-related default is increasingly being chartered. At the bottom, 'digital' communities have just begun to create awareness of new information-behavioural realities.

Vulnerability management needs to specifically address the learning or feedback phase of critical incidents, providing critical assessments of what functioned effectively and in-effectively before, during and following crises. Learning phases receive the *least* attention from scholars, practitioners, managerialists and the media, because organisational learning efforts are costly in time and effort and are the least dramatic and visible in the short term (Argyris and Schon, 1978; Argyris, 1982; Rosenthal, Hart 't and Charles, 1989; Korac-Boisvert and Kouzmin, 1995a). Yet it is, arguably, the most crucial stage of crisis (after mitigation, prevention and planning) for improving actors' understanding and capacity to cope with crisis dynamics (Argyris and Schon, 1978; Argyris, 1982; Rosenthal, Hart 't and Charles, 1989; Korac-Boisvert and Kouzmin, 1995a). It is the phase where IT, for example, can be effectively used to improve understanding and the learning capabilities of a large number of actors. Simulation crisis scenarios (real and perceived) and crisis databases are just some examples of learning facilitated by IT. Learning in simulated environments allows for the reduction of organisational and procedural rigidities that hinder learning during crises and allows only for organisational adjustments or reaction learning (single-loop learning). Simulation allows for experi-

mentation and *post hoc* generative learning.

Bringing in new, crisis-sensitive ideas to eliminate ingrown management cognitive biases and old economic consensus at the time of ever-diminishing agency resources and threat pose genuine leadership challenges to organisations as they require new learning strategies sensitive to *ideology, crisis vulnerability* and *context* (Unger, 1987; Dixon and Kouzmin, 1994: 62-67).

Vulnerability audits by institutional leaders help to analyse and predict how organisational disturbances (re-engineering, downsizing, crises) might affect organisational performance (Hood and Meg Huby, 1988). For example, during re-engineering, organisations use vulnerability analysis to predict how cutbacks of resources will be distributed—what disappears, what survives, what prospers? Organisations may be resilient against spending cuts but be highly vulnerable to staff cuts, marketing strategy, IT adoption, inter-agent-driven crisis management capacities or management training, to mention just a few longer-term vulnerabilities. Identifying these vulnerabilities is necessary but equally important is the effective management of identified vulnerabilities and learning how to be prepared for the unthinkable (Kouzmin and Jarman, 1989). In many ways, these vulnerabilities transcend the IT variable and are inherent in crisis-illiterate administrative systems, developed or developing alike.

Risk analysis and risk communication within, and between, agencies are emerging as two critical policy issues as current understanding of crises moves beyond causality attributable to 'externalities'. To the extent that risk is a 'person-made hazard', with the creators of risk effectively devolving their created risk onto others, risk analysis requires urgent re-focusing. If society distributes risk disproportionately, then risk analysis can be seen as the privilege and the propaganda of the powerful, rather than the concerned voice of crisis victims. Highly ideologised visions of 'efficient' and competitive organisation and charismatic entrepreneurial authority are dangerous illusions in this context of understanding contributing factors to risk, vulnerability and preventable crises.

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