

Surprises in Management and Organization: Concept, Sources and A Typology*

Miguel Pina e Cunha, Stewart R. Clegg[†] and Ken Kamoche[‡]

Faculdade de Economia, Universidade Nova de Lisboa, Rua Marquês de Fronteira, 20, 1099-038 Lisboa, Portugal; [†]School of Management, University of Technology, Sydney, Broadway NSW 2007, Australia; and [‡]City University of Hong Kong, Department of Management, Tat Chee Avenue, Kowloon, Hong Kong.
Email: mpc@fe.unl.pt [Cunha]; sclegg@uts.edu.au [clegg]; mgnkk@cityu.edu.hk [Kamoche]

We discuss why surprises, defined as events that happen unexpectedly or expected events that take unexpected shapes, are important to organizations and should be considered in the organization and management literature as an umbrella concept, encompassing a variety of related phenomena. The concept of organizational surprises is unpacked and a typology is built around the (un)expectedness of the issue and the (un)expectedness of the process. This typology uncovers the several types of surprising events that organizations may face, and contributes to the literature by identifying how different types of surprises require distinct managerial approaches.

Introduction

There is a long and honourable research tradition in management and organization studies concerned with that which is either unpredicted or perceived to be unpredictable. The lineage includes but is not limited to such influential authors as James D. Thompson's (1967) work on buffers, Lawrence and Lorsch's (1967) work on 'environmental uncertainty', and Pfeffer and Salancik's (1978) resource dependence theory, as well as Meyer's (1982) work on organizational jolts. The aim of these researchers was the understanding of how organizations seek to control the consequences of unpredictable events.

Unpredictable events, however, cannot be exactly controlled as Tsoukas (2005, p.280), indicated when he qualified uncertainty as organi-

zation studies' disciplinary 'demon, a never-disappearing intruder threatening the orderly system of thought that scientific activity seeks to create.' Compared with interest in the reduction of uncertainty, we know far less about its reverse, or what happens when uncertainty reduction efforts fail, when organizations are taken unawares. The 'fear of uncertainty', as pointed out by Tsoukas, should not obscure its relationship with surprise: indeed, he recognizes that the 'key word here is "surprise". To acknowledge and accept the open-endedness of the world means that we must find a symbiotic relationship with uncertainty' (Tsoukas, 2005, p. 293).

In this paper we will explore the meaning of surprise in organizational settings, and in doing so will establish a significant difference between 'uncertainty' and 'surprise'. Uncertainty is a state or condition of being unsure about a given phenomenon, having a lack of assurance or conviction concerning its state or being. To be surprised, by contrast, is not to lack surety about the parameters of a phenomenon but to suddenly or unexpectedly encounter a phenomenon not

*Miguel Pina e Cunha gratefully acknowledges support from Instituto Nova Forum. An earlier version of this paper was presented at the Academy of Management Annual Meeting, August 2003. We gratefully acknowledge the comments from the anonymous reviewers.

previously considered, it is to be taken unawares, and to feel a sense of wonder, astonishment, or amazement at something unanticipated. Thus, to be surprised is to be taken unawares, without preparation, with no anticipation beforehand. On the whole, this is the opposite state to that most frequently recommended for good management, where, from the earliest days, predictability, control and routine have been prized (Clegg, Kornberger, and Pitsis 2005). While management may strive to be as consequential and controlling as it is possible to be, in the memorable words of Donald Rumsfeld when faced with the chaos of post-war Iraq in 2004, 'stuff happens'. Indeed it does. Less prosaically, as remarked by Dee Hock, the manager who designed VISA, everything has both intended and unintended consequences. The intended consequences may or may not happen; the unintended consequences always do (quoted by Weick, 2004, p. 51).

In this paper, we dedicate our analysis to unintended consequences of organizational action and will gather several phenomena under the umbrella concept (Hirsch and Levin, 1999) of organizational surprises, within which we will distinguish facets of the unexpected comprising the umbrella. We argue that the focus on surprises is relevant because the dominant focus on rules and rationality excludes the transient and imperfect nature of organizations from view (Lanzara, 1999). A few exceptional authors, such as March (1988) and Meyer (1982), have focused on those things that break the rules, that rattle the rationality of the iron cage and unsettle expectations, but the majority of researchers manage to render the mundane world as, on the whole, fairly unsurprising. Yet, despite the lack of research on surprise rather than on uncertainty, surprise remains immanent to open-ended business systems.

Some empirical cases of organizational surprise follow: Dell's mail order strategy caught the personal computer industry by surprise. The effectiveness of Domino's delivery strategy was a surprise to Pizza Hut. Consumers' reaction to New Coke was surprising, considering the discrepancy between predictions and actual responses. The George W. Bush administration were surprised that the citizens of Iraq did not greet an invading army as liberators and proceed in an orderly way towards a liberal market economy and democracy. Clearly, while all these

phenomena may be deemed surprises, they are not all cut from the same cloth. The first two cases provided surprises to competitors; the second two cases proved surprising for their progenitors – it was their expectations rather than those of their rivals that were confounded.

Given the current lack of attention to the topic of organizational surprises, we will discuss the concept and advance a typology. Our goal is to contribute to the clarification of the meaning of organizational surprises in a world increasingly defined by unpredictability and turbulence. With this in mind, the paper is built around three major sections. The first section defines organizational surprises. The second analyses the sources of surprises. Internal and external sources are distinguished, but the interplay between them is not ignored. The third and final part elaborates a typology on the basis of two dimensions: issues and processes. We present surprises as an umbrella concept that articulates several dimensions and processes taking place at different levels of analysis, which have previously been explored independently. We suggest that the distinct events may be articulated because they share some features (they all take an organization unawares) but require different managerial responses. As such, the paper deals with the distinct and sometimes contradictory requirements faced by organizations and their managers when dealing with the reality that escapes prediction and control.

A Definition

The term 'surprise' comes originally into use in Middle English from the Old French, via Latin. The original meaning refers to an act of coming upon, or of being taken, unawares; the act of seizing unexpectedly. The person may be taken unawares by that which they do not know or by what they do not expect (even if they 'know' it, as in the case of the Pearl Harbor attack; see Lampel and Shapira, 2001). In other words, surprise may accompany a lack of attention rather than a lack of knowledge *per se*. Some may have known what to expect but not have been in a position to be heard. In such a case, the organization would not know, in the sense of not attending to, what some of its members might know, in the sense of being aware of the possibility of some such phenomenon. The need is evident for

research to address the way linkages between levels of analysis combine to produce surprises.

We demonstrate below that surprise, as we define it – as any event that happens unexpectedly, or any expected event that takes an unexpected turn – is an important concept and deserves critical attention in the organizational literature. The preference for overestimating control and predictability has led to ignorance about surprises (Weick, 2003). It is an ignorance reinforced by the fact that many surprises are negligible and have no real impact on organizational activity – for example, when an unexpected complication occurs during surgery but is successfully solved. Other surprises, such as when a high-profile patient dies because doctors fear the consequences of any intervention that they might make, as was the case with Stalin's death, can have hugely unpredictable results – such as the end of Stalinism. These surprises have high impact, strategic implications and consequences. As such, surprises should not be taken as dichotomous on/off phenomena but rather should be considered as a variable with a threshold. The perception of surprise then becomes a matter of impact.¹ Surprises can potentially result in organizational catastrophes (e.g., Shrivastava, 1992), faltering reputations (Fombrun and Rindova, 2000), or weakened competitive positions (Provan and Skinner, 1989). Some surprises prefigure themselves in the form of warning signals that, for one reason or another, may go unnoticed (Wissemma, 2002), while others apparently come without warning (Levy, 1994). Sometimes some surprises are subsequently seen as having been analytically inevitable, as in the case of normal accidents (Perrow, 1984), while others could have been avoided – at least when dissected in retrospect (Watkins and Bazerman, 2003). Some surprises are rapidly neutralized while others escalate (Staw, 1976).

Research on distinct varieties of surprises deals with such diverse themes as crisis management (Mitroff, 1988), escalating commitment (Staw, 1976), high reliability (Weick and Roberts, 1993), sensemaking (Weick, 1995), improvisation (Kamoche, Cunha and Cunha, 2003), and so forth. A systematic and integrative typology of organizational surprises, however, is still missing. The

treatment of organizational surprises as an umbrella concept will encompass both favourable (e.g., when a failed invention becomes a successful innovation, as happened with 3M's Post-it notepads) and unfavourable cases (e.g. when an apparently successful routine degenerates into tragedy, as in the case of the Challenger launch). If we take surprises as failures of knowledge or interpretation, they will be seen as emerging in interactive fields (i.e. in action settings that result from the interaction between expectations, dispositions and local particularities) whose actors have not been able to manage the correspondence between internal representation and collective action. Considering that organizational knowledge is always incomplete (Hayek, 1945), and that uncertainty and ambiguity are inherent to complex organizational environments, surprises should be a well established field of organizational research. However, this is not the case.

Given the importance of this phenomenon, why has it been given less attention than it deserves? Why has writing about surprises been more descriptive, with little to say about how people react to surprises? We suggest that this may be due to the fact that being surprised is perceived as the opposite of 'good management'; at least as it is portrayed in mechanistic approaches (Pondy and Mitroff, 1979). Traditional organizational wisdom, engineering-based and rationality-oriented, emphasized such features as objectivity, detachment and control (Shenhav, 2003). As a result, as noted by Tsoukas (1994, p. 3) 'in our modern societies . . . prevention is deeply valued; we don't like to be taken by surprise'. Organizing is reduced to predictability – to a phenomenon lacking any surprising or non-routine qualities (Ritzer, 2004). Surprise should be viewed as a process that seizes attention in an organizational field, despite predictable expectations, instead of being an instrumental process developed with existing tool kits. We now consider the sources of surprise.

Sources of Surprise

Surprises may have systemic sources that are both external and internal (Lampel and Shapira, 2001). From an external perspective, surprises can be viewed as inherent to complex systems such as organizations and their environments (Levy, 1994). Traditional management thinking,

¹We are grateful to an anonymous reviewer for this suggestion.

however, dealt with a world of mechanistic, hence predictable, organization (Tsoukas, 1994). Organizational populations are said to be composed of agents exhibiting rational behaviour. Such a perspective is questionable on several grounds.

A first criticism refers to the possibility of possessing complete or unbounded knowledge. Friedrich Hayek asserted that the major economic problem is a knowledge problem: the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess ... Or, to put it briefly, it is a problem of the utilization of knowledge which is not given to anyone in its totality, (1945 pp. 519–520). Complexity theory aids understanding of why knowledge is never total. Agents make up complex adaptive systems, such as organizational fields, in such a way that they are sufficiently structured to express behavioural regularity but are also marked by variation and a potential for novelty. Due to the complexity of agent behaviour, novelty is inscribed in the fabric of social systems and so surprise is inherent to these systems. It is not possible to have access to knowledge in its entirety because the 'entire knowledge' is never stocked anywhere but is an emergent property of interaction, as discussions of the distributed nature of knowledge and the challenges it poses for organizational work indicate (e.g. Orlikowski, 2002).

Kauffman (1995) sees complex systems as living on the edge of chaos, compromising between preserving structure and buffering the environment, as in the work of Thompson (1967), while responding to surprise. Contrary to the predictions of traditional economics, complex systems may not tend towards equilibrium. Indeed, they may never pass through the same state more than once (Levy, 1994). That is why surprise is a pervasive feature of complex systems, not an exogenous factor amenable to removal. Externally induced surprises come from outside of present cognition. It is not that cues are overlooked but that new cues are generated outside of what cognition presently and customarily attends to. The external perspective may be supported with theoretical approaches, such as Austrian economics or complexity theory, which present organizations and their environments as generators of novelty through interaction, competitive rivalry

and creative destruction of the existing state (Kirzner, 1993; Roberts and Eisenhardt, 2003).

Managers' interpretations of external environments may amplify rather than control the potential for surprise, as theorists who advance a cognitive explanation for the emergence of surprises suggest (Starbuck, 1993). Viewing surprises as cognitively generated amounts to viewing people as failing to attend to the relevant cues or clues, which is why they are caught by surprise: the archetypal reader of a thrilling suspense novel would fall into this category. In a cognitive explanation the mind does not process adequately what is cued: indeed, the superior intelligence of Agatha Christie's notable fictional characters, Hercule Poirot and Miss Marple, is that they sense the importance of minor and seemingly disconnected pieces of information that others overlook. Some organizational surprises will be similar to this example: for instance, when a football team with ageing but costly stars has a board that does not cue that the players who attract the crowds' loyalty and support are blocking the opportunities for team renewal now to build for the future.

Cognitive processes influence the unfolding of surprises because cognition should not be taken as a pure and direct representation of the external world. Organizational cognition is influenced by organizational characteristics, namely culture and the dominant logic, i.e., the embedded successful recipes associated with such elements as business models, organizational processes, and strategic approaches to competition. The dominant logic may impose cognitive blinkers which prevent the organization from seeing relevant but peripheral information (Pralhad, 2004). As observed by Gonzales (2003, p.120), 'The design of the human condition makes it easy for us to conceal the obvious from ourselves, especially under strain and pressure. The Bhopal disaster in India, the space shuttle Challenger explosion, the Chernobyl nuclear meltdown, and countless airliner crashes, all happened in part while people were denying the clear warnings before them'. In this sense, the 'weak signals' that pre-announce surprises do not exist as such in the organization's environment, 'waiting to be picked up' (Seidl, 2004, p. 156) by the organization's members. Signals are constructed as such by people scanning the environment. In this sense, managers construe organizational surprises. They

do so by ‘capturing’, enacting and interpreting some parts of the environment, while ignoring others (Isabella, 1990). The notion of requisite variety may be useful at this point. According to Ashby (1956), systems able to display a variety of behaviors have the ability to respond to diverse stimuli, being more prepared to react promptly and flexibly to surprising events. A topical example will suffice to make the point.

The case of 9/11

An article on ‘Surprise and Intelligence Failure’ by Douglas Porch and James J. Wirtz, in the electronic journal *Strategic Insight*, supports the cognitive view. These authors address the issue that we now know by the name 9/11, in the following terms:

‘Surprise is as old as warfare itself. The frequency of its occurrence in history, however, offers neither adequate warning nor consolation, especially when its effects can be so devastating. The events of September 11, 2001 proved especially shocking both because they were so destructive and because they were so unexpected. Yet, both the fact that the attack occurred and even the form it took should not have taken the United States completely unawares. Familiarity with terrorist methods, repeated attacks against US facilities overseas, combined with indications that the continental United States was at the top of the terrorist target list might have alerted us that we were in peril of a significant attack. And yet, for reasons those who study intelligence failure will find familiar, 9/11 fits very much into the norm of surprise caused by a breakdown of intelligence warning.’

In retrospect, the terrorist attacks on the Twin Towers should not have been such a surprise as they undoubtedly were, although it should not be discounted, however, that situations tend to look more predictable in retrospect (MacKay and McKiernan, 2004). There were plenty of indications that the United States in general and New York’s Trade Towers in particular had been singled out for attack. They had been bombed by Islamist extremists in 1993, as were the Khobar Towers in Dhahran, Saudi Arabia in July 1996. Islamist radicals lacking sophisticated weapons had previously adopted low-technology altruistic suicide (Durkheim, 2002) in order to destroy highly symbolic targets. In retrospect, the attacks

were foreshadowed by the bombing of the US embassies in Kenya and Tanzania in August 1998 and the attack launched by a suicide boat on the USS *Cole* in October 2000. Additionally, the day before the 9/11 attack, the Congressional Research Service had published a report citing the links between bin Laden and Near Eastern terrorist groups, using suicide bombers. The signs were overlooked for three reasons: good intelligence indicators were lost in the ‘noise’ of disinformation; there was a belief that the enemy lacked the technical capacity to undertake the action, and what Porch and Wirtz (2002) refer to as ‘mirror imaging’, ‘the assumption on the part of the intelligence “consumer” that the action undertaken was unlikely because it was “illogical”.’ Before surprises happen, even those which, in retrospect, were prefigured, it requires a great foresight and intuition to cull out the ‘good’ information that does the foreshadowing from the plethora of data. Porch and Wirtz (2002) note that relevant ‘information may be filtered out as it is sent up the bureaucratic chain because it seems unimportant, trivial or irrelevant to more important concerns. Local FBI agents reported that Arab students in flight schools only wished to learn how to take off, not to land’. But the information’s significance remained buried until informed by hindsight. Organizational ‘noise’ occurs when organizational jurisdictions overlap, compete and are unclear, encouraging hoarding rather than sharing of information between rival agencies. The inability of the CIA and the FBI to communicate contributed to the failure to detect the 9/11 attacks, just as the failure of army and naval intelligence to cooperate aided the Pearl Harbor debacle, as they suggest. Organizations need to be able to ‘spot surprises, not just to confirm expectations’ (Starbuck, 1993, p. 83). Or, as Tsoukas (1994) puts it, managers sometimes fail in transforming events into experiences. It is this gap between events and experiences, facts and expectations, that explains why signals (events) that presage a forthcoming disruption, may not be properly noticed (i.e. converted into lived experience).

Some events, labeled as ‘wild cards’ in the foresight literature, may not be predictable at all, however (Mendonça *et al.*, 2004). Even the most experienced strategists are vulnerable to confirmation of expectations or the difficulty of articulation between events and experiences. Shrivastava

and Schneider (1984) discussed the way managers develop frames of reference, or sets of assumptions that determine their view of business and the organization. Frames of reference may be helpful because they focus attention on what is important. But they may create patterns of habitual thought: as they grow more rigid, managers often force surprising information into existing schema or ignore it altogether' (Sull, 1999, p. 45). As such, managerial issues are interpretations of facts, not objective representations of reality (Thomas and McDaniel, 1990). In the interpretation process, some surprising possibilities may simply be 'normalized' and accommodated to existing schema. They may erupt later and take the organization unawares. The forms these 'eruptions' assume is considered below.

A Typology

Organization can be thought of as dealing with repetition and routine (Weick and Westley, 1996). Westley (1990, p. 339) defines organization as 'a series of interlocking routines, habituated action patterns that bring the same people together around the same activities in the same time and place'. Under a mechanistic analysis of organizations, surprises tend to be viewed as failures of interpretation or failures of intelligence (Lampel and Shapira, 2002). Alternatively, they can be taken as failures of mindfulness (Weick and Sutcliffe, 2001), meaning that the complexity of social systems can be overlooked by human

decision-makers. As such, surprises are inevitable and some are not manageable at all.

In an attempt to both integrate the several types of surprises under an umbrella concept and to differentiate the distinct forms of surprises, we propose the typology presented in Table 1. It is built around two core dimensions: issue and process. We consider that an organization can be surprised by issues (i.e. identifiable and discrete entities, like the Y2K bug or a new product launch by a competitor) and/or by processes (i.e. by the unfolding of some sequence, as in 'normal accidents', where several non-identified causes interact to produce the unexpected outcome). The combination of expected or unexpected issues with expected or unexpected processes results in four distinct types of surprise-related concepts: routines (expected issue and process), sudden events (unexpected issue leads to a predictable process), creeping developments (expected issues that form unexpected processes) and losses of meaning (unexpected issue and process). The separation between issues and processes is, to some extent, artificial. This is because a surprising issue may evolve into a surprising process or because a surprising process may create a surprising issue. We assume this separation for the purpose of analytical clarity, but warn our readers as to the artificiality of the distinction.

Routines

Many events in an organization's life can be anticipated. The need to substitute equipment or to

Table 1. A typology of organizational surprises

	Expected process	Unexpected process
Expected issue	<p>Routines Distinctive characteristics: organizational routines in moderately dynamic markets</p> <p>Examples: linear routines, standard operating procedures, preventive action Managerial implications: management as controlling</p>	<p>Creeping developments Distinctive characteristics: emergent, complex and interactive processes lead to unexpected situations</p> <p>Examples: normal accidents, escalating commitment, cultural change Managerial implications: managing as empowering</p>
Unexpected issue	<p>Sudden events Distinctive characteristics: new themes emerge from existing processes</p> <p>Examples: exploration, evolutionary dynamics Managerial implications: management as facilitating learning</p>	<p>Losses of meaning Distinctive characteristics: novel, incomprehensible situations</p> <p>Examples: wild cards, crises of sensemaking, 9/11 Managerial implications: managing as sensemaking</p>

adjust to seasonal demand cycles is predictable. Expected issues are normally tackled with a planned approach in the form of a standard operating procedure or an organizational routine. Organizations competing in moderately dynamic markets can benefit from relying on fairly ordered and linear processes of this kind (Eisenhardt and Martin, 2000). But some exceptional events can also be anticipated and solved through planning. That was the case of the Y2K bug (Pearson, 2001). The anticipation of the potentially disastrous consequences of the Y2K bug created awareness and directed attention to the problem, which resulted in the prevention of losses.

Predictable events are those to which organizational routines, standard procedures and preventive solutions can be applied. Managers are trained to deal with these types of events that can be controlled. Tackling them involves the setting up of routines, the implementation and correction of standard procedures and the prevention of possible deviations. Managing routines involves a detailed knowledge and monitoring of operations, as well as the avoidance of deviations from what is expected. The organization can be understood as a mechanism or a cybernetic process. It is the managers' job to control the good functioning of the system. The managerial function in this mode is close to Fayol's (1946) description: planning, organizing, directing and controlling. As Mintzberg (2004) noted, these four functions correspond to an equal number of means of control. It is in this mode that managers may take charge. Sometimes, however, predictable routines may follow strange paths. Organizations may drift, and when they drift, managers cannot simply control, as we discuss next.

Creeping developments

Sometimes expected issues take unexpected shapes while unfolding and the system drifts (Ciborra, 2002). Some troubles may incubate unnoticed (Weick, 2004) and creeping developments take the organization by surprise. Organizations develop routines to deal with regular issues but the possibility of routines taking unexpected directions is real, because routines are not mere repetitions or invariant processes. Seemingly minor changes may accumulate and lead to major changes (Lanzara, 1998). One possible example of this dynamic is the process

through which incumbents in the photolithographic equipment industry were devastated by the sequence of minor changes that, despite their apparent lack of importance, had major impacts on system configuration (Henderson and Clark, 1990). Incremental changes triggered an unexpected process. In the same way, early leads won by luck can become amplified by increasing returns (Arthur, 1990). An illustration of how emergent processes may be triggered occurred when President Nixon announced, in 1972, the launch of a new philosophy for space exploration: 'This system will center on a space vehicle ... that can shuttle repeatedly from Earth to orbit and back. *It will revolutionize transportation into near space, by routinizing it*' (Mason, 2004, p. 131, quoting the Columbia Accident Board, italics in the original). According to Mason (2004, p. 131), 'if there is a crucial contextual point at which NASA began to transition from a culture focused on excellence to a culture focused on bureaucracy and production it is this 1972 pronouncement'. This new focus led the agency to lower standards and stimulated the creation of novel concepts like 'acceptable risk' and 'acceptable erosion'. These notions were foreign to the original culture of safety excellence and emerged through interaction in previous decades.

Even when nothing is seemingly changing, emergent processes may be accumulating to produce some relevant change. Expected issues which are apparently managed with recourse to standard processes, may trigger the potentialities of routines as generators of undetected change (Feldman, 2004). Routines are not mere repetitions. As noted by Feldman and Rafaeli (2002), routines allow the creation of shared understandings that are useful in dealing with the negotiated order. But when the negotiated order they rest upon is changed, they change accordingly. As such, routines play a dual and somewhat paradoxical role in the functioning of organizations: they are the building blocks of both stability and change. If much literature has demonstrated the mechanical side of routine (e.g., Hannan and Freeman, 1983; Nelson and Winter, 1982), there is a growing attention to their evolutionary and mutating force (Hutchins, 1991; Tsoukas and Chia, 2002). It is the adaptive nature of routines that explains how, sometimes, organizations can find themselves unexpectedly transformed through the accumulation of minor

improvisations in organizational habits (Orlowski, 1996). Careful decisions may also lead to unexpected processes, as in the launch of New Coke. As described by then CEO Roberto Goizueta We set out to change the dynamics of sugar colas in the US, and we did exactly that – albeit not in the way we had planned (Chandran, 2002, p. 2). There is thus the possibility of a voluntary move (like a product rejuvenation) producing a dynamic of its own, which escapes the intentions of the decision makers who started the game.

When organizations drift by means of creeping developments, managers cannot control the process, because it acquires a life of its own. Cultural change, for example, is not fully amenable to hierarchical control. To avoid drifting in undesired directions, managers may set up clear objectives (e.g. under the form of visions or goals) and define minimal structures that limit without constraining. If managers cannot retain control, they distribute it. If processes drift, they can only be corrected by people closer to the operations. In order to deal with drifting processes, managers should not seek to control employees: they might instead provide the rules for letting people control the operations. As an illustration, captains do not control activity on the flight deck of aircraft carriers: they empower others, closer to the scene, to do so. The captain's responsibility is to develop and maintain a general perspective of the system, i.e. 'to have a bubble' Roberts and Rousseau, 1989 and to cultivate mindfulness.

Sudden events

Unexpected facts or events may sometimes combine with existing and identified processes. An initial, extemporaneous decision may ignite a process that is severely constrained by the initial decision. Baker, Miner and Eesley (2003) offer an example of such a possibility in an organizational setting when describing how a startup engineering firm developed a 'family like', people-oriented culture. Due to difficulties in recruiting candidates, the entrepreneur told an uneasy recruit that he envisioned the firm as a family. As the story worked well, he repeated it. The unexpected issue, in this case the organization's philosophy and cultural profile, was introduced impromptu and led to an expectable process and outcome: a people-oriented culture, later affirmed in practice.

The unexpected issue – an idea that emerged on the spur of the moment to convince a candidate – led to a predictable process.

Organizations may get tied to unexpected aspects that suddenly become relevant issues because people start to explore ways that become more and more significant. They may grow enough to impose themselves on the organization. Tactical improvisations and incremental explorations may redirect the strategy of an entire organization (Baker *et al.*, 2003). The evolution of an organization's domain of activity may emerge through an expected evolutionary process and be perceived as a surprise when it becomes institutionalized, as happened in the case of Intel's change from a memory to a microcomputer company (Burgelman, 1991). When organizations encourage experimentation they may be surprised by the emergent result of the process in the long run. Strategies may thus be as much influenced by the top management as by collective action in an emergent mode (Mintzberg and Waters, 1982). It is not possible to control the issues, meaning that, from a certain point on, they may impose themselves on the organization. A culture that emerges and is viewed as legitimate, may need to be accepted and even cultivated, as in the case of Baker *et al.*'s entrepreneur. Emergent surprises may happen as fruits of serendipity, improvisation, bricolage or the accumulation of incremental changes. Emergence, then, is a result of exploratory efforts. When organizational members engage in exploratory expeditions, they may learn something that will push the organization into an unexpected direction, from which it may be difficult to turn back.

Loss of meaning

Unexpected issues may combine with unexpected processes as in the case of Honda's entry in the US market: 'We used the Honda 50s ourselves to ride around Los Angeles on errands. They attracted a lot of attention. One day we had a call from a Sears buyer. While persisting in our refusal to sell through an intermediary, we took note of Sears' interest. But we still hesitated to push the 50cc bikes out of fear they might harm our image in a heavily macho market. But when the larger bikes started breaking, we had no choice. We let the 50cc bikes move. And surprisingly, the retailers who wanted to sell

them weren't motorcycle dealers: they were sporting goods stores' (Pascale, 1983, p. 6). The succession of surprises created a moment of confusion that needed to be tackled by Honda's representatives. The existing mindset was no longer adequate for explaining organizational action and for framing decision-making.

What is significant in the Honda example is that it shows how taken-for-granted assumptions, intentional plans, and tested strategies may fail and confront organizations with the need to create new meaning from the ashes of a previous strategic intention. Such a combination of unexpected issues and processes may lead to loss of meaning. These situations may have some resemblance to those labeled by Weick (1993) as cosmology episodes or 'vu jàdé' situations, occasions that astonish people and force them to a fundamental re-analysis of their assumptions and habitual behaviours. This distinguishes this mode from the previous ones, where existing frameworks were not necessarily disrupted by the surprise.

The 9/11 attacks on the Twin Towers astonished people in the US, and globally, forcing the US government to a fundamental reanalysis of its assumptions and habitual behaviours. What was surprising was that they had not put the pieces together to form a pattern that became all too clear. Intelligence agencies knew that suicide bombing was a routine Islamist strategy; they knew that suicide bombers routinely hijacked modes of transport as vehicles of destruction, both boats, cars and trucks; they knew that high profile US targets were liable to attack; they knew that the Twin Towers had been the target of a previous Islamist bombing, and they knew bin Laden had declared war on the US. All the threads were there but the connection had not been made because the meaning of altruistic suicide and vehicular attack had not made sense of the easiest way in which this might be achieved with respect to the Twin Towers – from the air.

The manager's job, when facing the realization of a loss of meaning, consists in facilitating sensemaking and allowing interpretations that match the characteristics of the new environments the organization is facing. Managers, like survivors in extreme situations, need to 'drop their tools', i.e. they have to acknowledge that their habitual modes of thinking may not be adequate (Weick, 1993). Managerial functions

under losses of meaning may include the development of interpretations that adjust to the new situation by means of frequent interaction, the implementation of a swift and improvised plan of action to face the unexpected situation, and a balance between structure and flexibility (in order to adjust planned modes of action to the unfolding features of the situation). Moments of confusion can lead to either success or failure (Weick, 2004), asking managers 'to design structures that are resilient sources of collective sensemaking' (Weick, 1996, p. 148).

Conclusions

The four 'poisons of the mind', according to the philosophy of the Korean martial art called Kum Do are fear, confusion, hesitation and surprise (Gonzales, 2003). They may all lead to death in this lethal type of combat. The human tendency to anticipate and predict may, equivalently, put organizations into a disadvantageous situation: when confronted with surprises, they may find themselves confused. Despite their importance, organizational surprises have not been integrated in a single conceptual space. When examining them, many authors direct their attention to the prediction and neutralization of surprises, for example by means of the analysis of 'weak signals' pointing to strategic discontinuities (Ansoff, 1975). Despite the potential relevance of such interest in prediction, instrumentality and neutralization of surprises, some surprises are unpredictable. Hence Brown and Eisenhardt (1998, p. 7) noted that 'competing on the edge is about surprise' and warned managers that 'something that you are doing has the potential to surprise you' (Brown and Eisenhardt, 1998, p. 122). The complexity literature, contrary to the mechanistic, prediction-based approach, views surprise not as a threat to neutralize but as an inherent feature of complex systems: novelty is a systemic property that should be accepted, not an exogenous factor to remove.

In this article, we advanced two major points. First, we argued that the lack of awareness regarding the role of surprise as an umbrella concept in organization theory is unfortunate because in hindsight people tend to reduce 'surprisingness' (Goiten, 1984). As such, they may fail to learn from experience and misattribute

surprising outcomes to uninformed decision-makers. As Weick and Sutcliffe (2001) argue, people tend to overestimate the degree of clarity, structure and predictability of the events they face. By taking surprise as an inherent feature of complex systems, managers will accept that no one completely understands the technology, the actions of other people and the multitude of changes in the context. Therefore, rather than merely insisting on the prediction of surprises, organizational researchers should investigate how organizations might develop the resilience and mindfulness necessary to deal with unanticipated events. Attention to surprises will highlight the relevance of processes such as bricolage, improvisation, distributed decision-making, minimal structuring and dynamic adaptive capabilities, which are becoming part of the organizational repertoire of language and action. Different types of surprises may demand distinct types of managerial action.

Second, we suggest that the unpacking of the concept of organizational surprises discriminates amongst types of surprises which should be approached differently. Predictable events can be tackled with relative ease, while losses of meaning may involve the need to overcome significant levels of uncertainty and ambiguity. Managers can feel comfortable dealing with the former but they seldom are prepared to manage the latter (Mitroff, 1988). Hence the importance of distinguishing types of surprises, instead of treating them indiscriminately. In a world of complexity, the proneness to be taken by surprise, instead of the effort to predict every single surprise and to control the world around, implies a significant change in managerial mindsets.

Wrapping up, we synthesized the theoretical research on organizational surprises undertaken in various areas of the organizational studies. The goal was the development of a common conceptual framework that identified the sources and processes of surprising events of various kinds. We see a number of advantages in integrating organizational surprises under a common conceptual framework. Integration promises valuable opportunities for cross-fertilization between themes (e.g. planning and improvisation; structure and freedom; emergency and routine) and may facilitate a better understanding of how surprises arise and how they can be managed. If, as pointed out by Winter (2004), there is no good

reason to expect significant improvements in the prediction of surprising events, it seems adequate to study how to deal with them as they unfold. Traditional efforts of prediction and control should then be combined with increased attention to organizational resilience.

Further research on organizational surprises may follow several directions. The tradeoff between being, and not being, surprised, is a pertinent one. Systems that are never surprised may be too complex for their environments whereas systems that are surprised too often may be excessively simple for their environments. Systems that are too sensible may mistake random noise for meaningful change in trends, whereas systems that lack perceptual abilities or potential behaviours may be vulnerable to organizational change. Researchers may wish, in other words, to investigate what is the optimal amount of surprise.²

Another area for future research, this time on a methodological level, has to do with the *ex post* reduction of 'surprisingness', traditional retrospective methods might not be well-suited to tackling the issue. Ethnographic and historical research methods may constitute valuable alternatives to the dominant quantitative approaches. They will make it possible to experience unobtrusively the impact of unexpected events, or to reconstitute longitudinal paths that make it possible to understand how surprising factors influenced the course of history (Landes, 1994). We also suggest that the way surprise manifests itself in each organization might depend on personal differences as well as the prevailing culture, thus suggesting the need for research into how these factors affect the perception of events as surprising and how organizations respond to surprises.

We recognize a number of limitations to our proposals. We have derived a typology from the existing theory but this theoretical exploration needs to be empirically tested. In this sense, we raise more questions than we provide answers. Empirical evidence may validate some of the types of surprises proposed here, invalidate others and suggest alternative ones. Since we presented distinct types of surprises, empirical studies may also suggest connections between types as well as developmental steps from one type to another. For

²We are grateful to an anonymous reviewer for this suggestion.

example, a creeping development may, at some tipping point, metamorphose into a sudden issue as was the case with Intel, when the decision to exit the DRAM business was discussed. In this sense, the gathering of several phenomena under a single conceptual frame risks conflating distinct processes and their diverse antecedents and consequences. Empirical research will be needed, therefore, both to integrate and differentiate types. The case of 9/11 sheds some light on the significance of this phenomenon of surprise, and illustrates some important consequences for organizations.

In this paper we have integrated a number of distinct concepts under the organizational surprises umbrella. We suggest that a number of phenomena well known in the organizational literature may be related under a single typology which establishes a number of connections between them. The analysis of the deep roots common to these various events, as well as the processes that may be used to tackle them, suggests avenues for future research. Considering that some of the concepts that have been indicated as relevant for dealing with surprises (improvisation, bricolage, resilience) are still being developed, there is clearly scope to examine further the nature of organizational surprises.

References

- Ansoff, H. I. (1975). 'Managing Strategic Surprise by Response to Weak Signals', *California Management Journal*, **18**, pp. 21–33.
- Arthur, M. B. (1990). 'Positive Feedbacks in the Economy', *Scientific American*, **263**, pp. 92–99.
- Ashby, W. R. (1956). *An Introduction to Cybernetics*. Chapman & Hall, London.
- Baker, T., A. S. Miner and D. T. Eesley (2003). 'Improving Firms: Bricolage, Account Giving and Improvisational Competencies in the Founding Process', *Research Policy*, **32**, pp. 255–276.
- Brown, S. L. and K. M. Eisenhardt (1998). *Competing on the Edge: Strategy as Structured Chaos*. Harvard Business School Press, Boston, MA.
- Burgelman, R. A. (1991). 'Intraorganizational Ecology of Strategy Making and Organizational Adaptation: Theory and Field Research', *Organization Science*, **2**, pp. 239–262.
- Chandran, P. M. (2002). *The Launch of New Coke*. ICFAI Center for Management Research, Hyderabad, India.
- Clegg, S. R., M. Kornberger and T. Pitsis (2005). *Managing and Organizations: An Introduction to Theory and Practice*. Sage, London.
- Durkheim, E. (2002). *Suicide: A Study in Sociology*; trans. John A. Spaulding and George Simpson; ed. with an introduction by George Simpson. Routledge, London.
- Eisenhardt, K. M. and J. L. Martin (2000). 'Dynamic Capabilities: What Are They?', *Strategic Management Journal*, **21**, pp. 1105–1121.
- Fayol, H. (1946). 'General Principles of Management'. In: D. S. Pugh (ed.) (1990). *Organization Theory. Selected Readings*. (3rd edn, pp. 181–202). Penguin, London.
- Feldman, M. (2004). 'Resources in Emerging Structures and Processes of Change', *Organization Science*, **15**, pp. 295–309.
- Feldman, M. and A. Rafaeli (2002). 'Organizational Routines as Sources of Connections and Understandings', *Journal of Management Studies*, **39**, pp. 309–331.
- Fombrun, C. J. and V. P. Rindova (2000). 'The Road to Transparency: Reputation Management at Royal Dutch/Shell'. In: M. Schultz, M. J. Hatch and M. H. Larsen (eds), *The Expressive Organization: Linking Identity, Reputation and the Corporate Brand*, pp. 77–96. Oxford University Press, Oxford.
- Goiten, B. (1984). 'The Danger of Disappearing Postdecision Surprise: Comment on Harrison and March, Decision Making and Postdecision Surprises', *Administrative Science Quarterly*, **29**, pp. 410–413.
- Gonzales, L. (2003). *Deep Survival: Who Lives, Who Dies, and Why. True Stories of Miraculous Endurance and Sudden Death*. W. W. Norton, New York.
- Hannan, M. T. and J. Freeman (1983). 'Structural Inertia and Organizational Change', *American Sociological Review*, **29**, pp. 149–164.
- Hayek, F. A. (1945). 'The Use of Knowledge in Society', *American Economic Review*, **35**, pp. 519–530.
- Henderson, R. M. and K. B. Clark (1990). 'Architectural Innovation: The Reconfiguration of Existing Product Technologies and the Failure of Established Firms', *Administrative Science Quarterly*, **35**, pp. 9–30.
- Hirsch, P. M. and D. Z. Levin (1999). 'Umbrella Advocates versus Validity Police: A Life-Cycle Model', *Organization Science*, **10**, pp. 199–212.
- Hutchins, E. (1991). 'Organizing Work by Adaptation', *Organization Science*, **2**, pp. 14–39.
- Isabella, L. A. (1990). 'Evolving Interpretations as a Change Unfolds: How Managers Construe Organizational Events', *Academy of Management Journal*, **33**, pp. 7–41.
- Kahneman, D. and A. Tversky (1979). 'Prospect Theory: An Analysis of Decision Making under Risk', *Econometrica*, **47**, pp. 263–291.
- Kamoche, K., M. P. Cunha and J. V. Cunha (2003). 'Towards a Theory of Organizational Improvisation: Looking Beyond the Jazz Metaphor', *Journal of Management Studies*, **40**, pp. 2023–2051.
- Kauffman, S. (1995). *At Home in the Universe*. Oxford University Press, New York.
- Kirzner, I. M. (1993). *Competition and Entrepreneurship*. University of Chicago Press, Chicago.
- Lampel, J. and Z. Shapira (2001). 'Judgmental Errors, Interactive Norms and the Difficulty of Detecting Strategic Surprises', *Organization Science*, **12**, pp. 599–611.
- Landes, D. (1994). 'What Room for Accident in History? Explaining Big Changes by Small Events', *Economic History Review*, **47**, pp. 637–656.
- Lanzara, G. F. (1998). 'Self-Destructive Processes in Institution Building and Some Modest Countervailing Mechanisms', *European Journal of Political Research*, **33**, pp. 1–39.

- Lanzara, G. F. (1999). 'Between Transient Constructs and Persistent Structures: Designing Systems in Action', *Journal of Strategic Information Systems*, **8**, pp. 331–349.
- Lawrence, P. R. and J. Lorsch (1967). *Organization and Environment*. Harvard University Press, Cambridge, MA.
- Levy, D. (1994). 'Chaos Theory and Strategy: Theory, Application, and Managerial Implications', *Strategic Management Journal*, **15**, pp. 167–178.
- Lindgreen, A. and J. Vanhamme (2002). *To Surprise or Not to Surprise your Customers: The Use of Surprise as a Marketing Tool*, Working paper. Eindhoven University of Technology, Eindhoven.
- MacKay, R. B. and P. McKiernan (2004). 'Exploring Strategy Context with Foresight', *European Management Review*, **1**, pp. 69–77.
- March, J. G. (1988). 'The Technology of Foolishness'. In: J. G. March (ed.) *Decisions and Organizations*, pp. 253–265. Blackwell, Oxford.
- Mason, R. O. (2004). 'Lessons in Organizational Ethics from the Columbia Disaster: Can a Culture be Lethal?', *Organizational Dynamics*, **33**(2), pp. 128–142.
- Mendonça, S., M. P. Cunha, J. Kaivo-oja and F. Ruff (2004). 'Wild Cards, Weak Signals and Organizational Improvisation', *Futures*, **36**(2), pp. 201–218.
- Meyer, A. (1982). 'Adapting to Environmental Jolts', *Administrative Science Quarterly*, **27**(December), pp. 515–538.
- Mintzberg, H. (2004). *Managers not MBAs*. Prentice-Hall, London.
- Mintzberg, H. and J. A. Waters (1982). 'Tracking Strategy in an Entrepreneurial Firm', *Academy of Management Journal*, **25**, pp. 465–499.
- Mitroff, I. I. (1988). 'Crisis Management: Cutting through the Confusion', *Sloan Management Review*, Winter, pp. 15–20.
- Nelson, R. and S. G. Winter (1982). *An Evolutionary Theory of Economic Change*. Harvard University Press, Cambridge, MA.
- Orlikowski, W. J. (1996). 'Improvising Organizational Transformation over Time: A Situated Change Perspective', *Information Systems Research*, **7**(1), pp. 63–92.
- Orlikowski, W. J. (2002). 'Knowing in Practice: Enacting a Collective Capability in Distributed Organizing', *Organization Science*, **13**, pp. 249–273.
- Pascale, R. T. (1983). *Honda (B)*. Harvard Business School Press, Boston, MA.
- Pearson, C. (2001). *Note on Organizational Crisis Management*, (case 9B02C041). Ivey School of Business, London, Ontario.
- Perrow, C. (1984). *Normal Accidents: Living with High Risk Technologies*. Basic Books, New York.
- Pfeffer, J. and G. R. Salancik (1978). *The External Control of Organizations: A Resource Dependence Perspective*. Harper & Row, New York.
- Pondy, L. R. and I. I. Mitroff (1979). 'Beyond Open Systems Models of Organizations'. In: B. M. Staw (ed.), *Research in Organizational Behavior*, **1**, pp. 3–39. JAI Press, Greenwich, CT.
- Porch, D. and J. J. Wirtz (2002). 'Surprise and Intelligence Failure', *Strategic Insights*, **1**(7), (September 2002), accessed 8 October, 2004 at <http://www.ccc.nps.navy.mil/si/sept02/homeland.asp>.
- Pralhad, C. K. (2004). 'The Blinders of Dominant Logic', *Long Range Planning*, **37**, pp. 171–179.
- Provan K, G. and S. J. Skinner (1989). 'Interorganizational Dependence and Control as Predictors of Opportunism in Dealer-Supplier Relations', *Academy of Management Journal*, **32**, pp. 202–212.
- Reppening, N. P. and J. D. Sterman (2001). 'Nobody Ever Gets Credit for Fixing Problems That Never Happened: Creating and Sustaining Process Improvement', *California Management Review*, **43**(4), pp. 1–24.
- Ritzer, G. (2004). *The Globalization of Nothing*. Pine Forge Press, Thousand Oaks, CA.
- Roberts, P. W. and K. M. Eisenhardt (2003). 'Austrian Insights on Strategic Organization: From Marketing Insights to Implications for Firms', *Strategic Organization*, **1**, pp. 345–352.
- Roberts, K. H. and D. M. Rousseau (1989). 'Research in the Bubble', *IEEE Transactions in Engineering Management*, **36**, pp. 132–139.
- Seidl, D. (2004). 'The Concept of Weak Signals Revisited: A Re-Description from a Constructivist Perspective'. In: H. Tsoukas and J. Shepherd (eds), *Managing the Future: Foresight in the Knowledge Economy*, pp. 151–168. Blackwell, Oxford.
- Shenhav, Y. (2003). 'The Historical and Epistemological Foundations of Organization Theory. Fusing Sociological Theory with Engineering Discourse'. In: H. Tsoukas and C. Knudsen (eds) *The Oxford Handbook of Organization Theory*, pp. 183–209. Oxford University Press, Oxford.
- Shrivastava, P. (1992). *Bhopal: Anatomy of a Crisis* (2nd edn). Paul Chapman, London.
- Shrivastava, P. and S. C. Schneider (1984). 'Organizational Frames of Reference', *Human Relations*, **37**, pp. 795–807.
- Starbuck, W. H. (1993). 'Strategizing in the Real World', *International Journal of Technology Management*, **8**, pp. 77–85.
- Staw, B. M. (1976). 'Knee-Deep in the Big Muddy: A Study of Escalating Commitment to a Chosen Course of Action', *Organizational Behavior and Human Decision Processes*, **16**, pp. 27–44.
- Sull, D. (1999). 'Why Good Companies Go Bad', *Harvard Business Review*, July-August, pp. 42–52.
- Thomas, J. B. and R. R. McDaniel (1990). 'Interpreting Strategic Issues: Effects of Strategy and Information-Processing Structure of Top Management Teams', *Academy of Management Journal*, **33**, pp. 286–306.
- Thompson, J. D. (1967). *Organizations in Action*. McGraw-Hill, New York.
- Tsoukas, H. (1994a). 'From Social Engineering to Reflective Action in Organizational Behaviour'. In: H. Tsoukas (ed.), *New Thinking in Organizational Behavior*, pp. 1–22. Butterworth-Heinemann, London.
- Tsoukas, H. (1994b). 'What is Management? An Outline of a Metatheory', *British Journal of Management*, **5**, pp. 289–301.
- Tsoukas, H. (1996). 'The Firm as a Distributed Knowledge System: A Constructionist Approach', *Strategic Management Journal*, **17**(Winter special issue), pp. 11–25.
- Tsoukas, H. (2005). *Complex Knowledge*. Oxford University Press, Oxford.
- Tsoukas, H. and R. Chia (2002). 'On Organizational Becoming: Rethinking Organizational Change', *Organization Science*, **13**, pp. 567–582.
- Watkins, M. D. and M. H. Bazerman (2003). 'Predictable Surprises: The Disasters You Should Have Seen Coming', *Harvard Business Review*, **81**(3), pp. 72–80.

- Weick, K. E. (1993). 'The Collapse of Sensemaking in Organizations: The Mann Gulch Disaster', *Administrative Science Quarterly*, **38**, pp. 628–652.
- Weick, K. E. (1996). 'Prepare Your Organizations to Fight Fires', *Harvard Business Review*, May-June, pp. 143–148.
- Weick, K. E. (2003). 'Theory and Practice in the Real World'. In: H. Tsoukas and C. Knudsen (eds) *The Oxford Handbook of Organization Theory*, pp. 453–475. Oxford University Press, Oxford.
- Weick, K. E. (2004). 'Rethinking Organizational Design'. In: R. J. Boland and F. Collopy (eds) *Managing as Designing*, pp. 36–53. Stanford Business Books, Stanford, CA.
- Weick, K. E. and K. M. Sutcliffe (2001). *Managing the Unexpected*. Jossey Bass, San Francisco.
- Weick, K. E. and F. Westley (1996). 'Organizational Learning: Affirming an Oxymoron'. In: S. R. Clegg, C. Hardy and W. R. Nord (eds) *Handbook of Organization Studies*, pp. 440–458. Sage, Thousand Oaks, CA.
- Westley, F. R. (1990). 'Middle Managers and Strategy: Microdynamics of Inclusion', *Strategic Management Journal*, **11**, pp. 337–351.
- Winter, S. G. (2004). 'Specialized Perception, Selection and Strategic Surprise: Learning from the Moths and Bees', *Long Range Planning*, **37**, pp. 163–169.
- Wissema, H. (2002). 'Driving Through Red Lights: How Warning Signals are Missed or Ignored', *Long Range Planning*, **35**, pp. 521–539.

Miguel Pina e Cunha is Associate Professor at the Faculdade de Economia, Universidade Nova de Lisboa, in Lisbon, Portugal. He has a PhD from Tilburg University and has published studies in journals such as the *Academy of Management Review*, *Human Relations*, *Journal of Management Studies*, *Journal of World Business*, *Organization* and *Organization Studies*. His research deals with emergent processes in organizations.

Stewart R. Clegg is Research Professor at the University of Technology, Sydney and Director of ICAN Research (<http://www.ican.uts.edu.au>); a Visiting Professor of Organizational Change Management, Maastricht University Faculty of Business; a Visiting Professor at the University of Aston Business School as well as the Vrije University of Amsterdam, where he is Visiting Professor and International Fellow in Discourse and Management Theory, Centre of Comparative Social Studies

Ken Kamoche was born in Kenya. He obtained a DPhil at Oxford University as a Rhodes Scholar. His work has appeared in journals such as the *Journal of Management Studies*, *Organization Studies*, *Human Relations*, *International Studies of Management and Organization*. He has published four books: *Sociological Paradigms and Human Resources*, *Understanding Human Resource Management*, *Managing Human Resources in Africa* and *Organizational Improvisation*. Ken is currently researching the dynamics of knowledge creation and appropriation.