Notes on a complexity primer for practical managers

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As this journal's title, Organisations & People, suggests, managers have two types of responsibility. With respect to their organisations, they are responsible for managing processes, systems, and structures. With respect to people, they are responsible for managing the network of one-on-one relationships within which the vast majority of their work is performed. To be most valuable, any theory for understanding management should treat both aspects.

One of the most promising of such theories today is complexity theory, the study of 'complex adaptive systems'. Over the last decade, a growing number of studies have looked at organisations through the lens of complexity theory, yielding some promising insights. (A growing number of books now apply complexity theory to organisations. For discussions of many such studies, see *Emergence: A Journal of Complexity Issues in Organizations and Management*, vol. 1, no. 2, 1999.) Yet, almost the entire body of studies applying complexity theory to management has focused on its organisational aspects, exploring organisations as complex adaptive systems, with little attention to managing people as complex adaptive systems.

By contrast, this article focuses on people – both those who manage and those who are managed – as complex adaptive systems in the context of organisations as complex adaptive systems. To the best of our knowledge, this is the first attempt to take this approach. (The first published comments about the need for applying complexity theory to the level of people in an organisation were made by McKelvey (1999). McKelvey does not, however, speculate on the nature of what he calls the 'microstate' of an organisational system.) In this article, we search for useful complexity-based insights on managing people to complement the significant insights already gained about managing organisations. Currently, our understanding of what complexity theory suggests about managing people is based on three insights:

- As complex adaptive systems, human beings are autonomous and, therefore, act as autonomous agents within organisations. For this reason, managers should not expect to control the behaviour of others effectively in the command-and-control sense.
- The basic work of a manager in an organisation – or any human social group – is performed in the context of relationships. The most important are a manager's close one-on-one relationships, with subordinates, for example.
- The most effective way to manage people is through building mutually beneficial one-on-one relationships of trust.

Evolving our approach

Complexity theory is the study of complex adaptive systems, which one leader in the field, John Holland (1995), describes as systems composed of 'adaptive agents,' which are continually adapting to their environments, including each other. Each of these agents is, in turn, a complex adaptive system in its own right. Holland emphasises that much of the behaviour of such systems results from the interaction of the adaptive agents within them. In terms of systems composed of many human beings, individual people are the key adaptive agents. What makes human systems unique among complex adaptive systems is that each of these key adaptive agents has its own mind. This enables each human agent to conceive of infinite possible adaptations in any situation and take independent action of his or her free will. As a result, the behaviour of any human being in any complex social system – whether a family, organisation, political party or nation – can be even more difficult to predict than the behaviour of other adaptive agents in other complex adaptive systems.

In applying complexity theory to life in organisations with which we are familiar, the co-authors of this article began to see how valuable the insights of this theory could be to managers. We perceived that complexity principles are so interwoven into human behaviour that most managers have an intuitive understanding of them. Consider the adaptive nature of human beings as adaptive agents. Anyone who has grown up in a family when a grandparent moved in or in a class in junior high school when the teacher was changed mid-semester, knows how individuals behave as complex adaptive systems. Everyone involved changes behaviour in an effort to make this change in the environment work for themselves. As we combined the power of mind to generate unlimited responses with the insights of complexity theory, those insights helped us understand a variety of behaviours we have witnessed over the years.

Complexity theory, we concluded, represents an important tool for understanding the behaviour of people in all social systems. Even in organisations that rely on the most extreme command-and-control systems and process, people's behaviour reflects the principles of complexity theory. There simply is no alternative.

Armed with this realisation, we started talking about our findings to senior managers familiar with complexity theory. Initially, they most often told us that complexity theory was very 'interesting,' but was of no use to them. They had read the current literature applying complexity theory to organisations, which suggested to them that they had to learn a new approach to making their organisations more effective and that this new approach requires them to delegate responsibility and accountability to working groups. The senior managers we spoke to felt that these writers did not understand the environment in which managers typically work.

In order to present complexity theory in a way that these managers might find more

acceptable, we considered writing a complexity 'primer' – a basic, but not unsophisticated examination – explaining how complexity theory could be useful to managers in managing people, as contrasted with managing organisational processes and systems. Specifically, we wanted to explain how the basic principles of complexity theory could help them better understand and manage the most basic element of their work, their close working relationships, with subordinates for example, as unique complex adaptive systems continually adapting to each other. All managers, from CEOs to front-line supervisors – everyone, really – must manage such relationships, and any ideas that can enable them to do so more effectively are likely to be welcomed.

Practical managers

We decided, however, to target the primer specifically to what we call 'practical managers'. We identify practical manages as those who know that the command-and-control approach to working with another human being is often ineffective, even when their organisations reward them for adopting such an approach. They embrace the complexity insights we discuss below intuitively, because they have learned them in their everyday dealings with other people – in family, neighbourhoods and schools – and intuitively practice those insights. In contrast, less practical managers tend to see command-and-control as the best way, sometimes the only way, to manage, and are often confused at their inability to make others do what they are told, even to the point of viewing this inability as a personal weakness.

We propose to write the primer for practical managers for two reasons. First, we believe that less practical managers are likely to resist the lessons of complexity theory and will require a different approach from the one we are currently using before they can recognise the power of complexity-based management. Second, our work convinces us that most managers are practical managers of their personal relationships, especially with close subordinates. Such practical managers can be controllers when such an autocratic approach is, for any number of reasons, necessary. Yet, they know there is a better way, and will avoid command-and-control in their personal relationships whenever a more humane approach is likely to work. In fact, the most practical managers whom we have encountered are skilled in balancing the controlling requirements of the organisational systems with their understanding of the more flexible and humane approach for managing personal relationships.

Autonomous agents

Probably the most basic insight for practical managers is that all human beings are autonomous agents. That is, human beings, as complex adaptive systems, are always adapting to the continuing change in their environments, as *they choose to adapt to it*, given the restraints of their mindsets and of the systems – families, organisations, etc. – in which they live and work. After all, if human beings were not autonomous agents, why do people consistently rebel against even the most brutal constraints, in conditions as different as the slave uprising described in Howard Fast's *Spartacus*, the *samizdat* movement in the Soviet Union, or rebellions in American prisons, like the one in Attica, New York.

In some cases, people do behave *as if* they were not autonomous. But that can only happen when they want to appear to be compliant. They are choosing to do what they are told, rather than taking the risks involved with exercising autonomy.

Many of the formal structures and processes in organisations are designed to address what the management considers the dangers of way-

ward acts of autonomy. For example, most organisations use a variety of structures – from risk management programmes to internal audits to frequent inspections – often at great expense, to discourage people from exercising their autonomy in ways that hurt their organisations.

But personal autonomy and its consequent free choice of adaptation to changes in the work setting is a quality that management depends on much more than command-and-control managers, as well as many observers, realise. In most organisational disasters, a subordinate will explain, "I was just following orders," or "I was just going by the book." In emergencies, every manager expects people he or she supervises to improvise in ways that non-autonomous machines cannot. Some emergency situations can be anticipated and prepared for, but many were not anticipated when 'the book' was written. As a result, people, as autonomous agents, are the greatest strength – and potential weakness – of any organisation. The challenge is to engage autonomy effectively.

If we are correct that people in organisations function as autonomous agents, then managers cannot effectively control those they manage in the command-and-control sense. At best, individuals can control themselves, although even that is often difficult. If a manager is defined as someone whose job is to make the most of the resources at his/her disposal, then everyone, in every human social system, can be a manager. All can improve their effectiveness through understanding and applying the insights of complexity theory about autonomous choice to management of their personal relationships.

One-on-one relationships

From this personal perspective, organisations can be viewed as intricate networks of relationships among individuals. As a result, the second major insight complexity theory offers to practical managers concerns the nature of relationships, not only in organisations, but also in all human social systems. While there are many types of relationships – the multiple one-to-many relationships of teams, for instance – this article will only look at one-on-one relationships, which are the simplest, most fundamental of relationships.

One-on-one relationships occur as two autonomous human beings begin to adapt to each other. You can think of this process in terms of the diagram below of the dynamics of personal relationships:

Two individuals enter any relationship with a series of mindsets, the mental models by which each creates meaning in every situation – from the appropriate relationship between married people, to how to bring up children, or relate to a boss. Such mindsets are personal stereotypes, reductions of reality that enable each of us know the 'right' way to behave in any situation. We learn them in our families, neighbourhoods, schools and workplaces, as well as in media. Each mindset generates expectations; those expectations limit what

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individuals allow themselves to perceive; and what they perceive, especially what they perceive as their best interest, determines how they act.

In *Future Edge*, Joel Arthur Baker (1992:100) illustrates the power of mindsets when he tells the story of a scuba diver who found a can of Budweiser more than 150 feet below the Atlantic Ocean near Miami Beach. When he was taking off his scuba gear, he realised something peculiar. He'd seen the Bud can as red and white. Yet he now realised that red light is filtered out at a depth of 150 feet. His expectations were so strong that they overrode the information his senses had picked up.

As two people come together for some common purpose, whether in a family, church, or business, their relationship involves two different mindsets. For each, the mindsets generate a set of expectations about the other; those expectations limit what each perceives as possible; and what they perceive determines how each behaves in any situation. Any behaviour will cause new perceptions for both parties, and those perceptions will have an effect on their expectations, which may, in turn, effect their mindsets. In short, relationships create a two-way open learning feedback loop by which the two, as complex adaptive systems, adapt to each other.

Recently, while recovering from surgery, a friend had a unique opportunity to observe the management implications of this type of one-on-one interaction. When the surgeon made his daily rounds, it was clear that he and the charge nurse had a long-standing, trusting relationship. The surgeon treated the nurse as an equal partner in assessing and managing the case, relying on her condition reports and accepting each of her suggestions for follow-up. When the surgeon left for two days at a national meeting, his resident made the daily rounds, reflecting a more autocratic, 'professional' approach. The nurse responded with a degree of formal, deferential 'efficiency' that had not been observed with the surgeon. The point is that the differing behaviour of the surgeon and his resident in relationship with the nurse reflected their different mindsets. The surgeon's behaviour, in particular, reflected the years he'd worked with the nurse and learned to trust her judgment, experience the resident didn't yet have.

Later, our friend discussed the two physicians with the nurse. She told him that, despite outward appearances, her more collegial relationship with the surgeon was actually more efficient and effective. She also predicted that the young resident would eventually learn how to relate to experienced nurses; that she was working on it!

We want to emphasise here that treating one-on-one relationships as if they were isolated is clearly artificial. Even in a social system as small as a nuclear family, each person has a series of relationships that effect each other. Parents often work together in disciplining a child, but sometimes they don't, with one undermining the other. In an organisation, this network of relationships that effect each person in a one-on-one relationship is much more complex. But for the purposes of a complexity primer, looking at one-on-one relationships as if they could be isolated offers a simple, useful fiction from which to begin our exploration of the people perspective of management responsibility and accountability in organisations.

Managers and relationships

All of which leads to the third major insight for our complexity primer for practical managers: Creating mutually supportive, mutually beneficial one-on-one personal relationships is the most effective way for managers to succeed at their jobs.

What is the job of a manager in managing

one-on-one relationships? As we've noted, individual autonomy makes it impossible for a manager to 'command' anyone do a job, and be sure it will be done, much less done effectively and expeditiously. It's more realistic for managers to enlist others in a two-way collaboration on what should be done... and how. In doing so, managers can appeal to three motivations:

- Avoiding pain – being yelled at or negative performance appraisals, for instance – is the most immediate motivator for most people.
- Gaining personally, as in praise from a colleague, a sense of personal achievement, not to mention financial rewards, motivates the largest percentage of adaptations.
- Making their lives more meaningful through work can push people to truly heroic efforts, although in most organisations it is largely overlooked. Individuals tend to achieve at their highest levels when they are acting on personal visions of making contributions beyond themselves.

Most managers depend on the first two of these motivators to influence the behaviour of the people who report to them. Yet, a complexity perspective suggests the drawbacks of each. While avoidance of pain will get most people to do what a manager asks, an employee as autonomous agent may appear to do what a threatening boss suggests and then subvert these efforts when the boss turns away. More important, often the response to an implicit threat of pain is merely an adaptation that eliminates this threat, with no commitment to effective results.

An appeal to personal gain is much more likely to work. However, while that may win a degree of cooperation, it is not likely to contribute to building support of larger managerial objectives that the two people might share.

The appeal to personal meaning, on the other hand, does build on such similarities, developing mutual supportive understanding and trust in each other, as they share their visions of a better world. The hospitalised friend noted earlier recognised this power of sharing visions when the nurse told him how much her personal contribution to the recovery of her patients meant to her. It was, she said, the most important aspect of her life. She also reported that she was quietly working on the young resident to emulate the surgeon in his similar dedication to patients, pushing the resident beyond his concentration on disease. She was managing her relationship with the resident from her understanding of his quite different mindset. She was attempting to meet the resident's demands, but with a broader objective of re-awakening the humanity that she believed had originally attracted him to become a physician.

While we believe that this ability to manage one-on-one relationships is important to any theory of managing people, we also recognise that it has significant limitations. First, as noted earlier, all relationships exist in a network of other relationships. As a result, managers must remember that those they want to influence are to some extent bound by other relationships, within the organisation and beyond. Encouraging a person to take actions that might create conflict with others in their immediate networks is likely, at best, to require a great deal of preparation and work with those others. At worst, it can cause painful conflicts.

One perplexing challenge for practical managers concerns developing more effective relationships with subordinates whose mindsets require them to follow orders without fully weighing the consequences. Helping these people to become more comfortable with more effective uses of their minds often requires a great deal of patience, imagination and hard work. In almost all cases, their mindsets will change as they adapt to changed relationships

with their bosses, but not usually in a linear fashion. Explaining how these kinds of difficult processes work is a major goal of an effective primer for practical managers.

Benefits of this primer

We believe that a primer developed to help practical managers understand how to apply the principles of complexity theory to managing their personal one-on-one relationships can have several benefits.

First, it offers a systematic approach to understanding what practical managers have been doing intuitively. It is not so much a 'new' way of doing things as a methodology for enhancing what has worked for many effective managers in the past, even in organisations appearing to favour command-and-control management styles. This approach thus has the advantage of helping managers understand what they are doing right and building on that understanding, rather than telling them what they are doing wrong, in this way reducing resistance to these ideas.

Second, a primer, focused on managers' responsibility for managing people as well as systems, can make some of the principles of complexity theory accessible to them in a way that a purely organisational approach frequently does not. Once such managers realise the value of these ideas, they will become more willing to accept insights based on the organisational approach to complexity theory applications.

Third, the primer may prove useful to organisational consultants looking for more readily acceptable ways to explain complexity theory to their clients and then to implement changes based on it. For instance, this focus on individuals as complex adaptive systems suggests that changes in organisational structures and systems may sometimes disappoint simply because care was not taken to prepare individuals in their networks of relationships, thereby exciting resistance that might otherwise have been avoided.

Fourth, the approach this primer would take, with its emphasis on exploring the interactions of individual people as complex adaptive systems, can make an important contribution to the study of organisations as complex adaptive systems. As UCLA Professor Bill McKelvey pointed out (1999), to be scientifically valid, the application of complexity theory to organisations must account, not only for the behaviour of the whole organisation (as the organisational approach attempts), but also for the basic interactions that generates the behaviour of the whole. We believe that, in focusing on one-on-one relationships, we have done just that.

Of course, much work remains to be done beyond a primer – exploring one-on-two relationships, the even more complete relationships of an individual manager, and still more complex team relationships, as well as the interactions between organisational and personal perspectives. These are directions we are pursuing with a great deal of excitement, leaving us little time to flesh out the primer for practical managers. We hope that in publishing this beginning we can excite some more interest in an approach toward applying complexity theory with enormous potential for helping managers in their jobs managing both the organisation and the people with whom they work.

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BIOGRAPHICAL NOTE

Ken Baskin is a writer, speaker and consultant whose work focuses on helping managers reframe what they know best in order to be more effective. His recent book, *Corporate DNA* (Butterworth-Heinemann, 1998) explores such reframing by looking at organisations as if they were organisms. He is currently involved in applying complexity theory to organisations and, in this capacity, is a Fellow at the Institute for the Study of Coherence and Emergence.

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