

Managing Complexity from Chaos: Uncertainty, Knowledge and Skills

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The articles in this issue of *Emergence* display differing assumptions about *organizing*—i.e. about how the reproduction and renewal of structure take place. How are lines of demarcation drawn? Organizing's forms, limits and structures are visible in institutions and organizations. These institutions and organizations are products of regulative processes. But in what sort of space does ordering take place—what was “there” before there was “order”?

The space of pre-order is *chaos*. The activity taking place where pre-order meets order in (dis)order is *complexity*. Chaos appears to some to be the most apparent form of complexity. Chaos creates what appears to be infinite empty space—space that appears endless and interminable, space where organizing can take place. But organizational space is not aimless. Organizational space can, evidently, be empty of substance, but still full of (potential) significance. Chaos is the not (yet) organized—it is the possibility of the (going) to-be-organized. Chaos is a space that can be filled by management and organization. But how does the space get filled? And why?

Chaos, if conceived of as a space of infinite (social, political, existential) emptiness waiting for organizing, inevitably leads to something. This something or form waiting-to-be-achieved is *abri*, the safety that there-will-be-something, the knowledge that organizing will occur. *Abri* results

from *bricolage*. Organizing in chaos builds “order,” i.e. it creates “structure” in the not-yet-defined. Not only is *bricolage* acceptable in organizing, it is necessary that one mixes and matches elements, draws on dissimilar parts and pieces, improvises and initiates. In chaos, managers function by becoming *bricoleurs*. Complexity is the (social) field of *bricolage*. It is a form of experimentation wherein meaning and (dis)similarity match. Only by positing the emptiness of chaos is the necessary space for complexity and organizing found. Managers are experts in dealing with the emptiness of chaos—they know how to find and fill the social space where “there was nothing” but where “something can be.” They create *abri*, from the anxieties of the possible, i.e. in the “emptinesses” of “conceivable significance.”

The realization that chaos is in every single one of us can hurt. The acceptance of chaos can be a painful awakening to confusion and uncertainty. It may force us to acknowledge a lack of knowledge, information and skill. We can shore up our defenses by claiming that chaos is nothing but a motor for achieving “higher levels” of order. We can then claim that the disruption of everyday order leads to alternative (new) patterns of order. But between different plateaux of order there must be empty spaces of disorder. Postmodernism has focused on these empty spaces between the plateaux of order. The double profile in Figure 1, drawn in the manner of Edgar Rubin—wherein we either see a face looking from left to right or one looking from right to left, but are not able to see both faces at once—is a metaphor for the contemporary dilemma. We can see the modernist order and the postmodern one, but we cannot see what it is that actually divides, creates or defines (either) “order.”

The line in the profile drawing is from one side a nose and from the other a mouth; but we cannot see the “line” as a “line.” We see one order and then the other, but not the process of “ordering.” We can shift from one “positive” expression to the next. By stepping from plateau to plateau one does not gain insight into “complexification”—there is, at best, awareness of moving from one stepping stone to the next. How can we study “uncertainty,” how can we see the line emerge instead of the right or left image it produces? How does perception produce sameness, i.e. the image seen twice from one side; or similarity, a comparison between the left and right images? How can we generate a beginning and an end—see where the line starts and/or stops drawing a face (something that differs when looking from the left or the right side)? How do we bring about an inside and outside—determine what supposedly is flesh and what is taken to be empty space—that reverses from the one “read-



Figure 1

ing” of the image to the other? And how can we do all of these things at once?

In the line, the positive and negative, as well as the certain and uncertain, inhabit the same space. By determining figure and ground one could try to impose one image—get everyone to “see” one of the two faces and repress (all) alternative readings. This is what “positive” thinking attempts to achieve. Alternatively, one can embrace “perspectivism” and acknowledge that different images are seen depending on one’s point of view. This is what *difference* or diversity thinking attempts to do. A third possibility is to try to study the “line”—the principles of constituting representation. But these are determinant and indeterminant, material and spiritual, unitary and polarizing. Normal science and its research “skills”

try to choose one perspective and to “make it work.” It tries to proceed from one position of expertise to the next. Hidden forces of complexity, disorder and the unknown, may lurk behind the movement from the one positive position to the next; but society, technology and organization try to inhabit the clearings of intelligible positions. Contrastingly, “change experts” often embrace a deconstructionist position and assume that any text can be reduced to another (hidden) one.

If forms of practice are only possible by ignoring other forms of practice—by deleting uncertainties and distorting aspects of perception—then alternative forms of action can be revealed and developed by making the hidden manifest. Every position in a “clearing” is a simplification of experiential existence and every “skill” negates some aspects of feeling, knowing and possibility. Certainty is achieved by repressing uncertainty, knowledge by ignoring counter-argumentation, and skills by refusing to question aspect(s) of practice.

What would a new reconceptualization that would try to see the line be like? We know a lot about the modernist and “positive” way of doing things and also about the postmodern way of deconstructing them. But

we do not know much about how to think the positive and deconstructive at once. To do so, one would have to acknowledge that all organizing demands structure and that all structure harbors chaos.

Via the *abri* of managerial action, the illusion can be maintained that “things do not just happen.” Organizing can be seen to happen in certain ways and not just any which way. Managers are convinced that this “certain way” can be assessed, its “success” and “failure” can be measured. In everyday life, we assume the primacy of order, causality and efficiency. Chance is the concept we use to explain away any causality that we do not understand. Most of the time we cannot identify the coordinates of space and time that lead to organizing. We perceive “order” but do not “know” why or how. Things happen by “chance”—by undefined, not seen, never tangible factors that are not definable, observable or concrete in their results (*abri*).

Managers try to dominate, control, arrange, program and organize the disarray until it is tamed. Rules and order are constructed and maintained. What we “all know to be the case”—the “ordinary”—is accomplished. What we daily think and believe to be the case is created. Management—as a belief and managers as believers—plays a big role in producing “normalcy” and/or “positive reality.” Laws, rules and regulations—methods and procedures—are erected around our minds to prevent chaos and difference from invading. Indeterminacy and uncertainty are thought of as undesirable. They are unavoidable “problems” that managers have to deal with. Hereby, the rest of us can get on with our work (Tsoukas, 1997:12). Uncertainty is not thought of as creative space—it is mere nuisance. Affirmation of “positive space” is so strong that chaos and complexity are excluded, even as (necessary) stepping stones to (new) order(s) and position(s).

But chaos is not simply a “mess.” Dismissing chaos as mere “disorder” makes the nature of “order” unknowable. Chaos is not filled with bits and pieces of pre-order. Chaos is not comparable to a child’s room in disarray, with toys strewn all over the place waiting for someone to pick them up and to (re)create order. Chaos is not order in abeyance, waiting for the positive principle (of order) to reassert itself. Humanity can be disorderly but chaos never is. Chaos is pure eminence—a process of becoming—it never “is.” If organization is understood to be one positive site followed by another (as in much managerial literature), then it has no truck with chaos. But this is a form of logic that dooms organization to never know where disruption, change or process comes from. Organization is defined as the opposite of organizing; one either knows organization or organiz-

ing, but not both. Organization can be compared to seeing one face of the profile and being unable to understand the processes of drawing. Such seeing can never understand what it creates or becomes. Obviously, this is a very unsatisfactory epistemological set-up.

Consciousness of organizing entails differentiating between the one site and the other—the ability to see the one face and then the other—without losing the ability to study perception—to consider how it is that we see the faces. But as in the drawing, we cannot actually think the different positions all at once. Complexity is an effort to reconstruct an awareness of the variety of possible positions, knowing that they cannot (all at once) actually be seen or occupied. Of course, one can reject consciousness and choose an intuitive appreciation of organization; one can merely see the face that appears to one. In the popular literature (i.e. in the trade books), such a rejection of organizational knowing occurs—one “face” is more than enough. Thinking about “lines” is held up to ridicule. Admittedly, complexity is an intellectual stance that transcends what is perceptually possible. Complexity is constructed from perceptual elements, each of which is experientially possible, but all of which are not (at once) to be perceived. Complexity is not an idealization or reification of experience, but it does display circumstances in a manner that is perceptually impossible. Complexity is a theoretical artifact, a way of reconstructing experience to include more perspectives than are ever present, at once, in perception. Such supra-perspectivism is neither better nor worse than experiential reality—it is a representation, at once, of change and order that can highlight what unites the two.

When an aesthetic of “order” is opposed to that of disorder, radical disorder is named “anarchy.” But why do we prefer “order” to “disorder”? The answer seems to lie in the social consequences of “order” and “disorder.” The (social) elite of “order” is different than that of “disorder.” The politics of the one epistemology is different from the politics of the other. If chaos and complexity are readmitted into social action, what would be the political and organizational consequences of such an action? The “order” of managed institutions traditionally resists “disorder.” Management asserts that “order” is the norm and that the techniques of “ordering” are worth mastering. But aren’t the techniques of dis-ordering (creativity, deconstruction, flexibility, innovation) gaining more attention? Why this attention on the void between the sites of order? Why a growing focus on the techniques of passage—of movement, flow, *bricolage*? Our answer is that it is because the amount of time organizations can actually spend on plateaux has been radically reduced. The amount of

energy needed to find a plateau and stay there has grown disproportionately. The cost that organizing has to pay to prevail over disorder has dramatically increased. Disorder has ceased to be the exception; it is no longer a deviant moment of passage, from one point of structure to the next. Chaos is becoming ever present—the old opposition of organization and void is crumbling—“organization” has become a term to mean “existence in change.” Organization is coming to mean something very different—it is no longer the opposite of indeterminance, but rather an *activity* of indeterminance. And the name we give to this activity is complexity.

It is counterproductive to identify “good” organization with strategic vision and optimal performance. Managing, defined as action on a plateau, is temporary and doesn’t prevail for long. Disciplining an organization to remain on a plateau prioritizes non-learning and is not sustainable. Whether one calls the alternative post-Fordism, the postmodern society or complexity, linear economic utilitarianism no longer provides a safe basis for understanding organization (if it ever did). Order stems from chaos and is based on it—chaos is the potential, the energy entering the open system, the creative principle of order at the greatest possible distance from equilibrium. Organization encompasses exceptional moments of uncreativity, of undynamic action and of stasis.

Managers may claim that they maximize profits and do not accept decreases in effectiveness, but chaos (rapid change, short product life-cycles, customer unpredictability) makes a mockery of such claims. Managers, in their frantic efforts to control inputs and maximize outputs, strive in a losing battle against chaos. The assumption that organizations can choose a position in a fitness landscape and optimize the plateau that their organization is on is (fairly) unsubstantiated. Are skills needed to control chaos or to inhabit it successfully? It is unavoidable that the energy flows of change (chaos) will take their toll. Change may often be what businesses want to avoid, but no such possibility exists. For traditional management thought, chaos and complexity are bad. Production ought to be ordered, project management should look like a flow chart, and marketing is supposed to achieve its quotas.

Management’s credo has often been: “Let’s make things better; let’s make things simple.” But things are not simple. And simplicity is a form of denial, that is, trying to avoid the dynamics of indeterminacy. Management has been afraid of the creative “emptiness” (void) of creation and production. Plateaux (routinized action) can be made to seem simple, but fitness landscapes cannot. Moving about in a fitness land-

scape is an indeterminant process. The dynamism attached to complex processes and products (or services) is the motor of most (new) wealth creation; “making things simple” is a dangerous denial of necessary dynamism. High value-added products (and services) are characterized by complex production processes and are themselves complex—the credo of simplicity is a manifesto for economic decline (Rycroft & Kash, 1999). Complex order is “order plus process,” i.e. it is order coupled to disorder and stability being destabilized. It is order with many degrees of freedom. But management traditionally abhors a regime with many degrees of freedom. This is the key to its drama, and is essential to its inability to prevail.

Complexity, thus, is a complicated and intertwined process. It includes many layers of time and experience. The core of complexity is not something secret, not something never to be known, nor is it (unto itself) a difficulty or a problem. Complexity is not inherently obscurist. But at its core there is freedom of action and the openness of possibility, which we have called “the infinite empty space.” Organization creates a home (*abri*) and the road to it leads through the uncanny, through the “unfamiliar other ... [to] the future [which] is radically open-ended and, as such, ... may surprise us” (Tsoukas 1997: 12, 18). We have to confront “the unexpected and the unfamiliar ... [the] ‘wicked problems’ [as well]” (Lissack, 1999b: 117–19, 120).

Complexity is a “whole” in its own right. Like a poem, complexities are “not an entirely unique entity ... [and] ... like in poetic reading, [their] reality is not seen as a *fait accompli* but as possibility ... [just as narrative] meaning is not something already existing in reality-as-text but something emerging from the reality-as-text” (Tsoukas, 1997: 10, 15). *Emergence* bubbles up “as an overall system of behaviour that comes out of the interaction of many participants” (Lissack, 1999b: 111).

All the different elements of a system of complexity belong together. No matter how complex, in themselves, they fit together. The unity is not characterized by obedient subservience but as being-in and -for themselves. The elements *cohere* as a “totality of complexity.” Different elements can be close or far apart but remain in relationship. The elements need not be identical but they cohere as in “like,” “as,” “link” and “alike.” Coherence resembles being in “good company”—in good company there is a lot of listening and communication. In coherence, language is channeled and harnessed in mutual and reciprocal respect. In coherence, there is no one-way traffic, neither top-down nor bottom-up. Interaction is sideways and diagonal: “interactions require language or some other

mechanism of fairly continual communication ... [and] *word choice is ... a fundamental tool for the manager*" (Lissack, 1999b: 115, 120, 122, italics added). A company director who makes for "good company" encapsulates a network of complex relationships. Strength is derived from the secure knowledge that all the elements belong and that they belong together. They are complete—they complete each other—force is gathered through the special and complex *logos* of complexity (cf. Heidegger, 1929).

Complexity is a activity of coherence and a way of thinking. In complexity, the elements of a system commit to one another and the "whole of the elements" is committed to complexity. Conception (thought) and the conception of life (fecundity) are fundamental forms of complexity, which, as potential or possibility, is chaos. The actions of complexity are complementary when defined by the total of the system. They fill up the holes, gaps and voids; they connect nothingness with complex order. In Greek, "chaos" means void and nothingness. Filling the void is true added value.

Complexity's fulfillment is in *performance*. Many of the writers in this special number have produced performances as in the way that "implicit language mobilizes, enlists the reader in making sense of it and forces meaning performance upon the reader" (Bruner, 1986: 27). As Lissack (1999b: 115) states: "It is in the nature and quantity of the interactions ... that the organization as a whole can be moved toward a global optimum, even though each *patch* is [on appearance] acting selfishly" (italics added). Managing chaos and complexity has come full circle if we can *depend* on all the members of a complex system to create, prevail and remain dynamic.

These ideas offer a broad sketch of the thinking underlying the theme of uncertainty, knowledge and skills. The octet of articles herein are dedicated "to helping both practicing managers and academics acquire, understand, and examine ... new mental models" (Lissack, 1999a: 3, 4).

After having read through this issue of *Emergence* we hope that managers (and observers) will "see their companies in a different light than those who do not ... use the metaphors of complexity" (Lissack, 1999b: 117).

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