A 'Rhizomic' Model of Organizational Change and Transformation: Perspective from a Metaphysics of Change[1]

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We are not good at thinking *movement*. Our instinctive skills favour the fixed and the static, the separate and the self-contained. Taxonomies, hierarchies, systems and structures represent the instinctive vocabulary of institutionalized thought in its determined subordinating of flux, movement, change and transformation. Our dominant models of change in general and organizational change in particular are, therefore, paradoxically couched in the language of stasis and equilibrium. This paper seeks to offer an alternative model of change which, it is claimed, affords a better understanding of the inherent dynamic complexities and intrinsic indeterminacy of organization transformational processes.

Introduction

It has become almost a truism to assert that we live in an age of unprecedented change and transformation, in which the rapidity and irreversibility of such changes are said to be fundamentally affecting every aspect of modern life. It has also become a major preoccupation amongst management and organizational theorists alike to point out that organizations are increasingly finding themselves under constant pressure to creatively adapt and respond to such changes in order to remain profitably viable and/or morally and ethically attractive to a widening spectrum of organizational stakeholders (Kanter, Stein and Jick, 1992; Kilmann, 1989; Nadler, 1998). It is argued that, amidst this bewildering array of socio-political

and economic pressures brought about by the increasing complexification of economic and social transactions, the relentless advances of technology, changing cultural attitudes, and shifting ideological and political affiliations, captains of industry and public policy-makers, amongst others, are finding themselves more and more inundated with conflicting and often apparently incommensurable decisional imperatives, which none the less demand some sort of coherent strategic response.

Nowhere is this concern for the changing organizational environment and its effects more emphatically made than in the current literature on the management of change, renewal and transformation (Beckhard and Harris, 1987; Pettigrew and Whipp, 1991; Quinn and Cameron, 1989; Tichy, 1983). There is also a growing realization that our current theories of change are not sufficiently 'process-based' to adequately capture the dynamics of change. This has led the American Academy of Management (AOM) recently to call for papers that specifically address the issue of change from a processual perspective. 'Learning

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to think temporally and processually' they maintain 'are increasingly important skills for scholars and practitioners' alike (AOM call for papers, July 1998).

Yet, despite this heightened awareness, the dominant approach to the analysis of change continues to view the latter as something 'exceptional' rather than as a *sine qua non* of all living systems, including especially social systems. There has been little attempt to understand the nature of change *on its own terms* and to treat *stability*, *order* and *organization* as exceptional states. This is because, for most of us, our deeply ingrained habits of thought surreptitiously work to elevate notions of order, stability, discreteness, simple location, identity and permanence over disorder, flux, interpenetration, dispersal, difference and change. Our understanding of the social world is thereby conceptualized through the overly dominant static categories that obscure a logic of observational ordering based on the representationalist principles of division, location, isolation, classification and the elevation of self-identity. The widespread use of typologies, hierarchies, systems and structures as well as other forms of taxonomic classification in the analysis of organizational reality, for example, is one striking instance of this pervasive tendency in academic theorizing (see for instance, Kanter, Stein and Jick, 1992; Kilmann, 1983; Tushman and Romanelli, 1985; Van de Ven and Poole, 1995; Wilson, 1992). Typologies, taxonomies and classification schemas are convenient but essentially reductionistic methods for abstracting, fixing and labelling what is an intrinsically changing, fluxing and transforming social reality. Whilst they may serve as convenient handles for identifying the different types of organizational change processes observed, they do not get at the heart of the phenomenon of change itself.

This paper draws on a relatively forgotten tradition of process philosophers to throw fresh light on to the true nature of change, and to explore genuinely alternative approaches to the understanding of organizational change, renewal and transformation. It pits a *metaphysics of change*, in which primacy is accorded to movement, change and transformation, against the still-dominant Parmenidean-inspired *metaphysics of substance* which elevates stability, permanence and order. A metaphysics of change acknowledges the existence of an external fluxing reality, but denies our ability to accurately represent such a reality using established symbols, concepts and categories precisely because reality is ever-changing and hence resistant to description in terms of fixed categories. All representational attempts, according to this view, are forms of human abstraction emanating from our will to order. Representations do not simply correspond to reality. Rather they are simplifying devices which enable us to deal with what would otherwise be an intractable reality indifferent to our causes. Such a metaphysical position, therefore, accepts ontological realism, but rejects epistemological realism in favour of constructivism/social constructionism.[2]

This metaphysical 'reversal' has radical consequences for our understanding of the fundamental character of organization and change. It implies that what we experience as objective organizational reality is in fact aggregatively built up of interlocking acts of 'arresting', 'locating', 'regularizing' and 'stabilizing' arbitrary portions of an intrinsically fluxing and transforming 'real' into a coherent, liveable social world. In other words, organization, for process metaphysicians, is an essentially human accomplishment involving the deliberate 'slowing down' and fixing of reality. Taken in this light 'organization' and 'change' must be construed, not as complementary terms, but as intrinsically *opposing* tendencies which create the inevitable tensions and contradictions that are so vividly displayed in our living encounters with organizational reality. These opposing tendencies provide the necessary creative tensions for the natural process of organizational evolution and transformation to take place of their own volition. This means that an alternative conceptualization of the organizational change process must be formulated which takes into account the inherent dynamic complexities and intrinsic indeterminacy of organization transformational processes. Against the dominant evolutionary, contextualist, and punctuated equilibrium (Kanter, Stein and Jick, 1992; Miller and Friessen, 1980; Pettigrew, 1987; Tushman and Romanelli, 1985; Van de Ven and Poole, 1995) models of change, we offer a *rhizomic* model of the change

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[2] This position is described in a previous paper as 'becoming-realism', in contrast to the dominant position of 'being-realism' adopted by much of the literature on management and organization studies. For a more comprehensive argument, see Chia (1995, 1996).

process, in which the precarious, tentative and heterogeneous network-strengthening features of actor-alliances are accentuated. In place of the still-dominant bounded 'systems' view of social realities, it is argued here that, thinking in terms of the heterogeneous *becoming* of organizational transformation, the *otherness* of organizational outcomes and the *immanent continuity* of organizational traces, will enable us to develop an alternative set of conceptual lenses for understanding the inherently creative nature of change processes occurring in organizational renewal and transformation.

Such a radical departure from the familiar modes of organizational theorizing implies that the very strategies and priorities involved in the 'management of change' must be critically reassessed. If we follow the logic of this alternative *metaphysics of change* to its logical conclusion, it would imply that the *management* of change must, accordingly, entail, not the deliberate change-oriented form of external intervention so much preferred by conventional organizational change theorists and practitioners, but the alternative *relaxing* of the artificially-imposed (that is, culturally-inspired) structures of relations; the *loosening up* of organization. Such a relaxing strategy will allow the intrinsic change forces, always kept in check by the restrictive bonds of organization, to express themselves naturally and creatively. According to this understanding, therefore, change occurs naturally and of its own volition once the invisible hand of cultural intervention is removed. Such a metaphysical orientation eschews the control-oriented strategies preferred in conventional approaches to managing change. It is this radical contrast to such popular theories of organizational change and its consequences for the strategies adopted, which are examined in some detail in this paper.

Current conceptualizations of organizational change and transformation

Organizational change, according to the dominant management literature, implicitly regards the process of change as that often irksome, but necessary, *transitory phase* which organizations, as concrete, circumscribed entities, somehow have to endure in order to attain a supposedly more desirable state of affairs. Change is not regarded as an intrinsic and ongoing condition of all living relational configurations, including especially what we call 'organizations', but as something which requires external intervention and which occupies the temporal space between otherwise stable states of existence. In other words, change is either paradoxically thought of in 'state-like' terms, or, as merely an epiphenomenon of primarily stable and self-identical social entities. Such a view remains prevalent even in the more 'process-conscious' change theorists. Whilst the reality of change is often acknowledged, organizational change theorists remain unable to understand change *from its own standpoint*. For example, Kanter, Stein and Jick (1992) invoke the Heraclitean dictum; 'Nothing endures but change' to emphasize the reality of change in today's world. They acknowledge that the modern idea of change, however, 'typically assumes that it involves movement between some discrete and rather fixed "states", so that organizational change is a matter of being in State 1 at Time 1 and State 2 at Time 2.' (Kanter, Stein, and Jick, 1992, p. 9). This view of change, they claim, is best exemplified by Kurt Lewin's famous three-stage model of change: 'unfreeze, changing, refreezing'. They then go on to criticize this view as 'quaintly linear and static . . . so wildly inappropriate that it is difficult to see why it has not only survived but prospered' (ibid., p. 10). Yet when it came to their own formulation of the 'Big Three' model of change, it turns out that this is, at bottom, not all that different from Lewin's apparently static formulation.

In their model Kanter, Stein and Jick identify three types of change: macroevolutionary change involving a change in *identity* of the entity as it relates to its external environment; micro-evolutionary change in which the internal *coordinative* mechanisms are adjusted to take into account growth, ageing and progress; and finally, political changes involving shifts in *control* and vested interests (1992, pp. 14–15). Further on in their book they identify five 'events' which bring about change in organizations: grassroot innovations; crisis or galvanizing events; strategic decisions; individual implementors and change champions; and action vehicles (pp. 497–503). How the last two elements can be construed as events is somewhat baffling. For now, however, I shall concentrate on the underlying assumptions which inform their 'Big Three' model of change.

Whilst it is clear that Kanter, Stein and Jick, have much sympathy for the primacy and pervasiveness of change, it is also clear that they are not able to conceptualize it in 'changeful' terms. By typologizing and listing the types of change and how they are initiated, we are dealing only with their *effects* and *sources*, not the nature of change itself. Their natural 'bias' towards order, stasis and equilibrium shows up again when they maintain that 'Organizationally speaking, anything that is unique is not worth much attention because it is not *organizational* behaviour . . . if there is no underlying pattern and no evidence that one is developing, it is not *organizationally* important' (p. 11). But the problem with this outlook is that what is essentially unique *is* change, since it is change that actually works to produce an *emergent* pattern which only becomes evident retrospectively. So that by refusing to attend to the temporal spaces between pattern-emergence, Kanter, Stein and Jick, cannot ever really think change on its own terms. All they can and do do is record the *outcomes* of change. This tendency to reduce motion and change into static states has been roundly criticized by the French philosopher Henri Bergson. For Bergson:

> 'We argue about movement as though it were made of immobilities and, when we look at it, it is with immobilities that we reconstitute it. Movement for us is a position, then another position, and so on indefinitely. We say, it is true, that there must be something else, and that from one position to another there is the *passage* by which the interval is cleared. But as soon as we fix our attention on this passage, we immediately make of it a series of positions, even though we still admit that between two successive positions one must indeed assume a passage. We put this passage off indefinitely the moment we have to consider it. We admit that it exists, we give it a name; that is enough for us: once that point has been satisfactorily settled we turn to the positions preferring to deal with them alone. We have an instinctive fear of those difficulties, which the vision of movement as movement would arouse in our thought.' (Bergson, 1992, p. 145).

Kanter, Stein and Jick are not the only ones who are fazed by this problem, however. This is a widespread academic tendency traceable to the intellectual roots of Western civilization as we shall show in the following section. Many other reflective change theorists such as Dawson

(1994), Ford and Ford (1994, 1995), Pettigrew (1987), Van de Ven (1987), Weick (1998) and Wilson (1992), have puzzled over this issue and attempted reformulations or offered useful insights into the problem of understanding and researching organizational change.

For instance, Pettigrew is now well known for his insistence on the need to study change 'in context'. As he rightly points out, any rigorous study of strategic organizational change should emphasize the need to 'explore content, context and process linkages' (Pettigrew, 1987, p. 6). He maintains that any robust theory of change that is adequate to the task 'would simultaneously have to explain forces of stability and change, including exogenous and endogenous sources of change, link phenomena at micro and macro levels of analysis and deal with issues about the rate, pace and direction of change' (ibid., p. 6). Pettigrew is clearly aware of the inherent 'slipperiness' of understanding and theorizing change. Thus, he insists that sound research on change ought to involve 'the continuous interplay among ideas about the context, the process and the content of change, together with skill in regulating the relations among the three' (Pettigrew, 1987, p. 6). Expressed in this manner, however, change, context and process take on 'thing-like' characteristics rather than as dynamic flux and transformation. Others such as Wilson (1992) have attempted to provide a typology of different approaches to change. He makes useful distinctions between 'planned change', the 'force field analysis' of how change comes about, the 'emergent change' perspective and the 'contextualism' inspired by Pettigrew's study of strategic change. Wilson draws our attention to the essentially temporal nature of change and cites the research of Whipp and Clark (1986), to show that there is an important distinction to be made between 'clock-time' and 'perceived time' when attempting to understand the experiences of change in organizations. However, whilst usefully alluding to the importance of this distinction, Wilson, like many others, does not critically examine how this distinction has come about and what it really means for our understanding of organization and change. As we shall see in a later section when we discuss the Bergsonian critique of 'clock-time', this confusion results from a total misunderstanding of *movement* and *trajectory*, conflating one with the other, and hence resulting in the form of

'counterfeit' time that is widely used in the analysis of organizational change.

Perhaps Van de Ven's (1987) thoughtful piece provides one of the first rigorous attempts to theorize change in processual terms, albeit inadequately from the Bergsonian point of view. He begins by first attempting to define change. For him, change is '*an empirical observation of difference in time on one or more dimensions of an entity*' (Van de Ven, 1987, p. 331, emphasis in the original) and argues that 'Change without reference to an object is meaningless'. As we shall see in a later section, this position is refutable for it assumes a priori, the primacy of substance over process. Change does not necessarily imply nor require the change *of* an object. However, for the present, Van de Ven makes another useful contribution by distinguishing the 'process of change' from change itself. For him, '*the process of change is an inference of a latent pattern of differences noted in time*'. Thus, *change processes*, for Van de Ven, are not empirical observations, but conceptual inferences about 'the temporal ordering of relationships among observed changes' (ibid., p. 331, emphasis in the original). More critically for our discussion here, Van de Ven maintains that motion or movement in themselves do not constitute change 'although each is in some degree involved in change' (ibid., p. 331). How such movement is 'involved' in change, however, remains a mystery. By formulating distinctions in this way, Van de Ven seeks to articulate the basic conditions for a robust theory of change that will simultaneously explain:

(a) how structure and individual purposive action are linked at micro and macro levels of analysis;
(b) how change is produced both by the internal functioning of the structure and by the external purposive actions of individuals;
(c) stability and instability; and
(d) how time can be included as a key historical metric.

To this end, he imaginatively borrows and examines the relevance of mathematical and biological concepts to throw light on the processes and generative 'motors' of change. He finally settles for a 'Punctuated Equilibrium Model of Change' which, in his view, reconciles both evolutionary and accumulation (epigenetic) theories of change. In this model, change is deemed to occur most of the time incrementally and imminently. However, this process is intermittently punctuated by 'discontinuous periods of externally stimulated epigenesis' (Van de Ven, 1987, pp. 338–339).

Van de Ven's attempts, together with the attempts of the other change theorists previously discussed, to rigorously outline the requirements of an adequate theory of change and to systematically work towards a satisfactory model are to be commended. However, it is argued here that they are all too steeped in the dominant metaphysical tradition circumscribing Western thought to be able to recognize that an intellectual 'leap' outside of this all-pervasive Parmenidean-inspired mode of thought is required to begin to articulate a truly changeful and processual theory of change. This is something which Ford and Ford (1994) begin to approach in their discussion of alternative logics of change. For Ford and Ford, most theories of change can be grouped under either the 'replacement' logic of change or a dialectical logic of change. In the former, change is deemed to occur when 'one entity sequentially takes the place of or substitutes for a second' (Ford and Ford, 1994, p. 773). Thus, Lewin's model of change may be classifiable under this category as may most of the more linear, sequential ones, including Kanter, Stein and Jicks' model of change and the idea of 'emergent' change. In the dialectical model of change on the other, change occurs when 'there is a sufficient increase in quantity to produce a shift in quality' (ibid., p. 775). Unlike the replacement logic of change, dialectics assumes that 'entities are unities of contradictions (thesis and antithesis) that continue to "work at each other" until one dominates' (ibid., p. 775). This logic of change is what underpins Van de Ven's punctuated equilibrium model of change.

Ford and Ford (1994) propose an alternative *trialectic* logic of change based upon the belief that:

'. . . there are no things in the world other than change, movement or process. Things such as people, organizations, and ideas, are all names given to abstractions of what are identifiable and relatively constant patterns of movement extending over the whole universe . . . these identifiable states are termed *material manifestation points*.' (Ford and Ford, 1994, p. 765)

For Ford and Ford, change is driven by forces of *attraction* which result in these material manifestation points (MMPs) arising as semi-stabilized states. 'MMPs are temporary "resting points", in which an equilibrium of energy is made manifest, and it is this equilibrium that gives stability' (Ford and Ford, 1994, p. 766).[3] In subscribing to the primacy of change over substance and in showing that the latter can be understood as momentary manifest expressions, or temporary stabilizations of the former, Ford and Ford begin to approach the kind of truly processual understanding of change which this paper advocates. However, the view taken here is that Ford and Ford's trialectics, attractive though it may be, falls short of a full-blown *changeful* theory of change which is able to remain faithful to the reality of lived experience. This is because it still, albeit implicitly, presupposes linearity, homogeneity and determinacy in its formulation. Lived reality, however, is not just changeful, but inextricably complex, heterogeneous, multiple and surprisingly novel at every turn. What is needed, therefore, is a mode of theorizing that is more able to account for this *heterogeneity*, and the consequent issues of indeterminacy and *surprise* that forms a common part of our experience of organizational life.

Two Western cosmologies and their consequences

Western modes of thought are underpinned by two great and competing pre-Socratic cosmologies that provided and continue to provide the most general conceptual categories for organizing thought and directing human effort. Heraclitus, a native of Ephesus in ancient Greece emphasized the primacy of a changeable and emergent world,

whilst Parmenides, his successor, insisted upon the permanent and unchangeable nature of reality. The history of Western thought, ever since Plato, has, therefore, been little more than a continuing series of footnote attempts at synthesizing these two great but apparently irreconcilable intellectual traditions. One emphasizes reality as inclusively processual, the other privileging a homeostatic and entitative conception of reality (Rescher, 1996). After more than two thousand years of monumental deliberations on these legacies, through the seminal interventions of Aristotle, it is the Parmenidean mindset which has decisively prevailed over Heraclitean thinking in the West and has led to the kind of impressive achievements in the sciences that has made it the envy of the rest of the world. The predictive successes of Newtonian physics over three centuries ago decisively inspired the resurgence of Greek atomism which, despite recent attempts to replace it as a dominant metaphysical template, remains deeply entrenched in the Western psyche. The consequences of this for the direction which management and organizational change theorizing has taken must not be underestimated. Indeed, it has instilled a set of instinctive 'readinesses' (Vickers, 1965, p. 67) amongst Western management academics to construe organizational change as a 'problem' which needs to be 'managed'. This predisposition remains endemic in the literature on organizational change.

A metaphysics of substance/presence

Contemporary theorizing within the natural and social sciences is circumscribed by a metaphysical mindset which tacitly presupposes the necessary existence of enduring spatio-temporal and physical forms of order underlying the presentation of reality. Thus, the Newtonian description of matter uncritically assumes an entitative conception of reality in which clear-cut, definite things are deemed to occupy clear-cut, definite places in space and time. In his penetrating critical appraisal of science in the modern world, Whitehead (1985, p. 61) called this the mistaken assumption of 'simple location' whereby matter and hence causal mechanisms are assumed to be simply locatable at specific coordinate points in space-time. This privileging of an entitative conception of reality generates an attitude that assumes the possibility and desirability of symbolically representing the

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[3] What Ford and Ford (1994) are effectively saying here is that apparently circumscribed entities such as people, organizations and ideas are really the simplifying *effects* of our visually-defined forms of understanding. The boundaries which we take to be naturally circumscribing these apparently discrete entities, and which thereby make them appear obvious and self-identical, are a consequence of inheriting an observational order that has been so dramatically shaped by the alphabetization of the Western world as Marshall McLuhan (1967) so convincingly argues. In effect to talk and think in this way is to overlook the socially constructed nature of systems and boundaries.

diverse aspects of our phenomenal experiences, using an established and atemporal repository of conceptual categories and terms for the purposes of classification and description. For it is only when portions of reality are assumed to be fixable in space-time, and are relatively unchanging, that they can be adequately represented by words and concepts.

A 'correspondence theory of truth' is thus assumed, in which linguistic terms are taken to be accurately representing an external world of discrete and identifiable objects, forces and generative mechanisms. This *representationalist epistemology* also implies that it is more important to focus on the *outcomes* of change rather than on the process of change itself. Change, according to this view, is merely that transitory phase which is necessary for bridging the various *stages* of any evolutionary process. Underlying this intellectual attitude is an unshakeable assumption that reality is essentially discrete, substantial and enduring. It is this fundamental ontological assumption which provides the inspiration for the scientific obsession with precision, accuracy and parsimony in representing and explaining social and material phenomena, since these are now regarded as relatively stable entities.

For Whitehead (1985), this apparently unproblematic assumption of the simple location of matter, was what enabled Newtonian science to achieve the level of success it did. By postulating the prior existence of discrete and isolatable entities in space-time, it allowed Newton to formulate his now-famous Laws of Motion. It also enabled the associated concept of *causality*, to become, therefore, an invaluable conceptual instrument for relinking these (initially assumed) isolated entities so that their observed behaviours could be adequately accounted for in a coherent system of explanation.[4] Moreover, according to this Newtonian view, the state of 'rest' is considered normal, whilst movement is regarded as an essentially transitory phase from one stable state to another. In this way, change, flux and transformation are construed as epiphenomena

of basic Newtonian entities, rather than as fundamentally constitutive of the latter. It is this still-dominant paradigm of thought which has shaped the direction of research in the natural and social sciences in general, and organizational change in particular. Thus, Schein's unfreeze-change-refreeze formulation is clearly inspired by this classical world-view. In fact, all change theories underpinned by what Ford and Ford (1994) identified as the 'change-through-replacement' logic can be directly attributed to this Newtonian mindset.

This pervasive commitment to an ontology of *being* which privileges outcomes and end-states rather than an ontology of *becoming* in which movement, process and emergence are emphasized, implies that it is generically unsuited to the task of representing the true nature of processual change *on its own terms*. To be sure, change is acknowledged to occur, in this cosmological schema. However, such changes are deemed to merely signal the often-necessary transition from one relatively stable state to another. In other words, change is either construed paradoxically in a static sense, or as an epiphenomenon of primarily stabilized entities. This oscillating stance results from an inadequate working through of the logical tensions resulting from an unquestioned commitment to the ontology of being. One example of the kind of logical puzzles created by this substance metaphysics is illustrated by what is commonly referred to as Zeno's paradoxes.

The problem of how fixed and enduring substances can *act* to destabilize their world so as to bring new states of affairs into being has bedevilled substance metaphysicians from the very outset. For Parmenides, all such change is illusory. True reality is permanent, fixed and unchanging. This position was strongly supported by Zeno of Elea, a follower of Parmenides, who was perhaps the first to draw attention to the logical absurdity of movement and change, and to thereby cause Plato and others who followed in his footsteps to seek a true and coherent reality in that which *did not* change. Zeno is said to have formulated some forty logical paradoxes, of which only four seem to have survived. These four, the Dichotomy, the Achilles, the Arrow and the Stadium, all point to the patent absurdity of movement and change. For instance, in the Arrow, the problem is formulated thus: 'At each moment of an arrow's flight it is at a certain place, exactly equal to its own length so that at no moment can it occupy a place

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[4] Pre-Newtonian knowledge of phenomena, as Foucault (1970) so convincingly demonstrated, was based upon the notions of resemblance, resonance, recursion and proximity rather than on causal realations. For a more detailed discussion of this point see Chia (1996, pp. 39–43).

greater than its own length. Therefore, logically, there are no moments left when it could move from one place to another, so that it, in fact, never moves at all.'

Likewise, in the case of Achilles and the tortoise, Achilles races against the tortoise whom he generously but fatally, so it seems, allowed a head start. For, according to Zeno, Achilles must first reach the tortoise's starting point in order to catch up with the tortoise. However, while he does so the tortoise has moved on to a new position so that Achilles must now reach this new position. Again when he does this the tortoise has, yet again, moved on to a third position so that Achilles is never able, according to this logic, to catch up with the tortoise. In effect Achilles has to do infinitely many things before overtaking the tortoise. Like the previous example, Zeno again concludes that movement and change are impossible and therefore false.

Both these examples appear to vindicate the Parmenidean view of reality. However, this view was subsequently modified by Democritus, amongst others, to accommodate the possibility of change. Thus, we end up today with a modified entitative world-view, in which it is acknowledged that reality is actually made up of discrete, atomic entities which are capable of entering into a variety of combinations forming and reforming into different configurational structures. As Harré (1981) puts it:

> 'Then the atoms would be Parmenidean, but the changing *organization* of the Parmenidean atom into temporary structures would lead to the appearance of change. The ordinary things in the world, which are certainly perishable and come into existence, would, on this view, have to be temporary conglomerations of permanent atoms.' (Harré, 1981, p. 105, emphasis in the original)

The upshot is that a Parmenidean-inspired *metaphysics of substance* is retained, in which change is absorbed and incorporated as a *secondary feature* or epiphenomenon of reality. It is this modified mindset which underpins contemporary theories of organizational change.

The critique of the metaphysics of substance/presence

Whilst Zeno seemingly 'proved' logically that movement and change were impossible, it became increasingly clear that some of his assumptions were questionable. Bergson (1991), for instance, in *Matter and Memory*, maintained that Zeno's paradoxes were nothing but 'false problems'. For him, Zeno confused *movement* with *trajectory*. One is the actual event of movement, the other is the computed distance travelled. For Bergson, the trajectory is indeed infinitely divisible but real movement is not. Movement is the only thing that happens in time. It occurs as a single unity. Thus the arrow simply flies through the air and never *is* at any one point at an instant, because there are no instants in real processual time (which Bergson calls *dureé*). Zeno, thus, is guilty of mistaking movement and duration for the infinite number of possible points on a line of trajectory: an error we all too commonly make when we mistake clock-time for our *experience* of time. Or, to put it in more familiar terms, Zeno is guilty of mistaking the 'map for the territory'.

Likewise, Achilles simply moves until he catches up with his tortoise, no matter what we say about the *ground* over which he moves. It, therefore, becomes more evident through these two examples that what process theorists like Bergson are attacking about the *metaphysics of substance/presence* is the uncritical adoption of a view which dogmatically analyses movement into a set of rests; a kind of 'counterfeit movement'. This academic practice underpins not just neo-Darwinian evolutionary theory, but virtually every modern conceptualization of time and movement. First time, and then movement are conveniently construed in *spatial* terms and thereby rendered infinitely divisible. From this, time and movement are then reformulated as discrete, digitalized quantities amenable to mathematical formulation and logical manipulation. The result is an abstract version of time which bears no resemblance to our lived experience. For Bergson, all real movement and change is indivisible and cannot be treated as a series of distinct states that form, as it were, a line in time. Bergson's main claim is that the temporal structure of our experience does not consist in putting together given discrete items. On the contrary, so-called discrete elements are only apparent when we have a need to pluck them from our *continuing* experience in order to represent them in spatial terms. This overpowering tendency to *spatialize* time provides the dominant mode of thought governing our comprehension of reality. One of Bergson's crucial contributions,

therefore, is to alert us to the important distinction between the time of consciousness, *temps vécu*, and the time of the physicist or the clock time of everyday use. Whereas the latter consists of discrete points juxtaposed in a homogeneous medium, which has all the characteristics of space, the former is *duration*, a fusion of heterogeneous instants, an indivisible flux and becoming. Time, as the physicist understand it, is not, it turns out, an absolute dimension of the real, but a figment of our imagination, as Eoyang (1989, p. 280) perceptively argues. What is real is lived time. And, this sense of time is only made possible because of the changeful character of reality. What organizational change theorists have singularly failed to appreciate is that 'clock time' and the concept of movement associated with it (trajectory), cannot deliver a truly empirically grounded model of change. It is tantamount to attempting to reconstitute reality from a series of frozen snapshots. What is created is a 'counterfeit' version of change in general and organizational change in particular.

A metaphysics of process

The belief that 'all things flow' and are in a continuous process of *becoming* and *perishing* remains one of the most enduring, albeit vague, generalisations which the unsystematized and barely analysed intuition of mankind has produced. In the West, it appeared as one of the first propositions of pre-Socratic Greek philosophy in the form of the writings of Heraclitus. Since then, it has resurfaced in the work of Leibniz, and more recently in the philosophical explorations of Henri Bergson (1913a, 1913b, 1992) and in the process philosophical expositions of Alfred North Whitehead (1929, 1938, 1985). Whitehead, for one, insists that if we are to go back to that ultimate pristine experience unwarped by the sophistication of theory, the 'flux of things is one ultimate generalisation around which we must weave our philosophical system' (Whitehead, 1929, p. 240). Likewise, Bergson maintained that 'It is movement (i.e., change) that we must accustom ourselves to look upon as simplest and clearest, immobility being only the extreme limit of the slowing down of movement, a limit reached only, perhaps, in thought and never realised in nature' (Bergson, 1913a, p. 44). It is this resurrecting of the primacy of movement and change over that of stabilised entities and end-states which provides a

radically alternative view for understanding movement and change in general, and organizational change and the emergence of novelty in particular. According to this revised perspective, our experience of the world around us, particularly of what we call 'living systems' is one of inherent *becoming* and *perishing*.

Rescher (1996) points out that 'becoming and change – the origination, flourishing and passing of the old and the innovating emergence of ever-new existence – constitutes the central themes of process metaphysics' (Rescher, 1996, p. 28). For him, process metaphysics privileges change over persistence, activity over substance, process over product and novelty over continuity. It rejects what Rescher calls the *process reducibility thesis*, whereby processes are often assumed to be processes *of* primary substances. Instead, it insists that 'things' are no more than 'stability waves in a sea of process' (Rescher, 1996, p. 53). This is reminescent of Ford and Ford's (1994) idea of 'material manifestation points' which we have previously discussed. Rescher points out that adopting a process ontology greatly simplifies matter for our understanding of the material and social worlds because, instead of a two-tier reality of 'things' and their 'processes', it settles for processes alone, and considers things to be essentially *manifest* moments of these primary processes. It is this revised cosmology which is able to cast new light on the fundamental nature of organization and change. Against the *metaphysics of substance/ presence*, we pit a *metaphysics of change/process* where primacy is accorded to ceaseless movement, change and transformation. Such a metaphysical 'reversal' has radical consequences for our understanding of organization, change and the creative nature of evolution.

Axioms of process metaphysics

Three enduring axioms are traceable in a process-metaphysical approach to understanding our phenomenal experiences of change. They are variously accentuated in each of the work of process theorists such as Bergson and Whitehead and more recently in the work of Deleuze (1988), Deleuze and Guattari (1988) and Serres (1982), in particular. First, there is an unequivocal commitment to a process epistemology and to thinking the heterogeneous *becoming* of things. Second,

phenomena are to be interrogated through the *logic of otherness* and third, a principle of *immanence* underpins the presentation of everyday objects of knowledge. These three metaphysical axioms will be discussed in some detail below.

Process epistemology and the heterogeneous becoming of things

Process epistemology begins with the fundamental assertion that the actual world is a 'process, and that that process is the becoming of actual entities' (Whitehead, 1929, p. 26). Primacy, in this instance, is accorded to the changeable and processual nature of reality. In *Process and Reality* Whitehead makes this point succinctly:

> '. . . how an entity *becomes* constitutes *what* that actual entity *is*; so that the two descriptions of an actual entity are not independent. Its "being" is constituted by its 'becoming'. This is the principle of process.' (Whitehead, 1929, p. 28, emphasis in the original)

Whitehead points out that this philosophy of process, 'seems to approximate more to some strains of Indian, or Chinese, thought, than to western Asiatic or European thought. *One side makes process ultimate, the other side makes fact ultimate*' (Whitehead, 1929, p. 6, emphasis added). On this view, relationships, process, transformation and the heterogeneous becoming of things are construed as fundamental aspects of reality. Through their interactions and self-transformations, these, in turn, generate the stabilized features of reality that we find so immediately necessary and familiar. For Whitehead each 'entity' is not a discrete thing but an *atomic unit of experience* and it is this aggregative experiencing of the heterogeneous coalescing of events into a unitary entity which is our ultimate fact.

In a significant polemical contribution published in the journal *Human Relations*, Cooper (1976) explored the implications of adopting a process epistemology to understand the changing structure of expressive and creative action. Cooper points out that though they appear to be often irreconcilable, structure and process are in fact complementary to each other, both conceptually and in the real world. This is because 'structure can be snatched only out of process; and the novelty that emerges from process can realise itself only by submitting to structure' (Cooper,

1976, p. 999). Thus, the form of process derives its character from the structure of the individualities involved, and the character of the individualities can only be understood in terms of the processes in which they are implicated. The actual world is fundamentally in a continuous process of becoming so that every phenomenon of which we are aware – from galaxies to electrons, from human beings to amoebae, from human societies and families of crystals to nursery rhymes and creational myths – each exists as a stabilized moment in a process of continual becoming. Thus, there are no primary, fixed entities, no ultimate terms or essences. In short transition is the ultimate fact.[5]

Moreover, existence or structure cannot be simply abstracted from this process. The fallacy of a 'point' in process is rejected because it presupposes that process can be analysed into 'compositions of finite realities, themselves devoid of process' (Whitehead, 1938, p. 131).[6] Thus, contrary to Van de Ven's (1987) assertion that change necessarily implicates an 'object' of change, the view of change suggested here does not necessarily imply 'something changing'. Instead '*there are underneath the change no things which change: change has no need of a support. There are movements, but there is no inert or invariable object which moves: movement does not imply a mobile*' (Bergson, 1992, emphasis in the original). This way of thinking about movement, change and transformation is entirely foreign to our common-sense understanding. Yet, it is entirely consistent with the revolutionary ideas which precipitated the Einsteinian principles of relativity and prepared the ground for the new physics of our time.

Moreover, the process of change and becoming is by no means a homogeneous, linear unfolding. Rather, becoming is essentially *heterogeneous* in character. It is infinitely varied and unique in each of its expressions. As Bergson puts it:

> 'That which goes from yellow to green is not like that which goes from green to blue: they are

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[5] It is important not to confuse the assertion of an 'ultimate fact' with the notion of ultimate, discrete units of reality called 'things'. Here, I am using the term in the exact sense used by process theorists such as Whitehead (1929) in *Process and Reality*, where he insists upon a reality perpetually fluxing and in transition.
[6] This is, yet again, a reminder of the tendency to capitulate to what Rescher (1996) called the 'process reducibility thesis'.

different *qualitative* movements. That which goes from flower to fruit is not like that which goes from larva to nymph and from nymph to perfect insect: they are different *evolutionary* movements. The action of eating or drinking is not like the action of fight: they are different *extensive* movements. And these three kinds of movement themselves – qualitative, evolutionary, extensive – differ profoundly.' (Bergson, 1911, p. 321, emphasis in the original)

Bergson points out that our intelligence and our language both conspire to conflate these profoundly different becomings in terms of a 'becoming *in general*' (ibid., p. 321). Thus, we invariably substitute this complex composition of heterogeneous becomings that we inevitably experience for a concept of change that is general and undefined. 'An infinite multiplicity of becomings variously coloured, so to speak passes before our eyes.' Yet we only manage to conceptualize a 'becoming always and everywhere the same, invariably colourless' (ibid., p. 321).

The insistence on the reality of heterogeneous becomings, rather than a linear, progressive and homogeneous unfolding is an attempt to recover the uniqueness of each expression of change, renewal and transformation. As we have tried to argue, this flies in the face of writers like Kanter, Stein and Jick, who are only concerned to attend to the organized 'end-states' and who, therefore, consider the uniqueness of this multiplicity of becomings unimportant for our understanding of organizational change.

Logic of otherness

A second process-metaphysical axiom is the commitment to the *logic of otherness*. One of the most dominant and relatively unexamined sets of philosophical assumptions underpinning much of the natural and social sciences is the belief that things and events are unproblematically given to us as fully present and self-identical through the immediacy of our experiences. What is often overlooked in this commonsensical attitude is the pre-structured *field of possibilities* out of which objects of experience are allowed to emerge and to display themselves. Without this logical pre-structuring it would not be possible for us to establish the identity of an object of analysis. As Rescher (1996) points out, 'Identity rests on identifiability, and identification is something

interactional . . . And such identification is always and unavoidably processual' (Rescher, 1996, p. 56). This means that individual identity has a necessary reciprocal other to which it owes its location and definition. The *logic of otherness* is therefore an insistence that terms do not and cannot stand alone in and of their own right. Instead, the very platform on which things, identities and situations emerge is predicated upon the suppression and backgrounding of the other that has given rise to it.

Within the social sciences, for example, terms like the 'individual', 'society', 'organization' and so on are unreflexively reified and made to appear as immediately and naturally self-evident representations of concrete social entities existing 'out there'. Such apparent 'obviousness', however, puts these conceptual categories beyond critical analysis. However, as Cooper (1989) points out, these perceptions of 'presences' can be shown to be the constructed effects of deferrals and differences in language rather than the result of independent social entities triggering our perceptions. Yet, for the most part, it is this latter uncritical tendency which persists and which precipitates a widespread 'logocentric' attitude towards social analysis.

Logocentrism is a term first introduced by the French writer Jacques Derrida to describe the overarching conceptual order by which lived experience is translated into coherent explanation. It privileges observational presence, simple location, and self-identity as intrinsic characteristics of reality. Observational presence implies that things are as they appear to us. What is not immediately perceived cannot be deemed to exist unless it can be rendered present to us. Simple location emphasizes the inherent locatability of all experienced phenomena in space-time. For causal analysis to succeed, it must first be possible to locate and isolate both causal factors and their effects. Finally, self-identity implies that they can be straightforwardly named and represented using linguistic terms and conceptual categories. Perceived phenomena, according to this logocentric attitude are deemed to be 'simple, intact, normal, pure, standard, self-identical' (Derrida, 1977, p. 236). Logocentric 'presence' is thus a form of covertly willed prior knowledge which installs itself as a kind of 'perfect' foundation or origin from which authoritative statements can then be made about the status of reality.

Logocentric thinking, motivated by an origin-seeking impulse, thus generates a form of linear and hierarchical thinking which goes from reality to representation, and from effect to cause, establishing these as the necessary relationships through which the world must be understood.

It is against this dominant logocentric tendency that post-structuralist concerns with the *logic of otherness* or logic of *supplements* can be better understood. This reaction against logocentrism draws much inspiration from a contemporary post-structuralist reading of language and the way meaning is constituted. Thus, drawing from the work of the structural linguist Ferdinand de Saussure (1974) – who argued that language is a system in which terms are not defined by a straightforward relationship to an external referent but by the presence of other terms from which it is seen to differ – Cooper makes the important point that: 'Far from the positivity and fixity of sign as meaning, (language) is essentially incomplete and without solid foundation, with neither beginning nor end, based on the negative, on what is not' (Cooper, 1986, p. 309). Meaning is never fully and immediately present in a term. Rather each term contains the traces of its 'other' which as other serves to supplement and complement it, thereby giving meaning to the term itself. Thus, the *logic of otherness* is immanent in all social structures. It is the insistence on the ineluctable necessity of the other in the constitution of the one.

Cooper (1983, p. 203) uses this understanding of reciprocal otherness to illustrate how an everyday example of the relationship between the humble screw and nut works. Inasmuch as a screw is a nut without a hole and a nut a screw with a hole, we can say that the screw and the nut complete each other by filling up what is lacking in the other, for a screw is the fill of a nut that lacks and, conversely, a nut is the fill of a screw that lacks. Thus, the screw and nut is one instance of the 'in-one-anotherness' that exemplifies the Heideggerian (1962) construal of the other in *Being and Time*. It is this insistence on thinking the logic of otherness which allows Cooper to realize that writers like Whitehead, Heidegger, Saussure, Bateson, Derrida, and Lyotard, though in very different ways, have been working to undermine the still-dominant *logic of presence* (what Whitehead calls 'simple location' and Derrida calls 'logocentrism') which underpins

much of academic theorizing and which unproblematically assumes the possibility of attaining full and immediate meaning and presence through the concepts and terms used in academic discourse.

For Cooper, Derrida and other thinkers of this *logic of otherness* or *supplementarity*, the supplement or the 'other' results from a kind of 'self-folding' which creates a 'silent' oppositional concept that functions to constitute the differences that, in turn, enables a text to stabilize its meaning. This self-folding is thus a way of creating an illusory origin necessary for the text to work. In this way the logic of 'supplementarity', of 'difference' and of the 'fold' or 'doubling', are all different but at the same time similar ways of thinking about the *logic of otherness*.

Principle of immanence

A lasting preoccupation of process metaphysicians has been the task of making more transparent the ways in which each organizational outcome or 'effect' always already incorporates and hence implicates the 'weight' or 'traces' of its genealogical past, which, in turn, creates potentialities for the future as well as constrains it. According to this principle of *immanence*, the past is immanent in the present and this fact implies that each outcome, each situation or state, always necessarily incorporates and absorbs the events of its past. Thus, the present is not merely the linear successor of the past but a novel outcome of it. Each moment of duration absorbs the preceding one, transforming it and with it the whole, constituting at each stage of the process a novel and never-to-be-repeated occasion necessarily grounded in its past, but always projected towards a not-yet-knowable future. Each happening or 'event' represents the actual realizing of one of the many possibilities presented by the past configuration of events. This constitution of the present by the past is a particular case of the necessary immanence of one thing in others. More importantly, this objectivity of the past in the subjective present means that contemporary fact is always loaded with possibilities and can be continually enriched with newer and novel meanings, understandings and application. Thus, apparently simple and everyday objects we find around us contain residual traces of organizational processes that are always already implicated in their day-to-day presentation.

These products are effects of human ordering impulses and must be understood to carry within themselves the traces of their heterogeneous becomings; with all the 'accidents, the minute deviations – or conversely, the complete reversals – the errors, the false appraisals, and the faulty calculations that gave birth to those things that continue to exist and have value' (Foucault, in Rabinow, 1984, p. 81). Each unique situation encountered must be appreciated to be carrying the *weight of its past* with it. Here, Jasper Johns painting *0 through 9*, provides the leitmotif for this style of thought. This painting created in the 1960s shows the whole sequence of primary numbers from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 presented in skeletal form, *superimposed* one on top of the other so that traces of the previous numbers remain in the background of each number added on. The overall effect is a kind of 'telescoping' of the numbers so that '0 through 9' are discernible figures with the others always forming the background for the number.

The painting *0 through 9* directs our attention to the necessary embeddedness of the numbers 0 through to 8 in the figure 9. Without the figures 0, 1, 2, 3, 4 . . . 8, the number 9, on its own, would have no significance. Nine implicates all the other previous numbers. Or to put it another way, 0, 1, 2, 3, 4, 5, 6, 7, and 8 are *immanent* in 9. This way of thinking directs us to view each observed event, each phenomena or situation as never being 'just that visible or immediately present' which is fully accessible and understandable to us. Instead, phenomena, things, situations, events often betray the rich and sometimes dark histories and accidental turns that have brought them into being. They are always already the cumulative blending of a complex multiplicity of genealogical traces.

Such an intellectual sensitivity to the immanent pattern of relationships in things and phenomena draws its inspiration from a revised understanding of change and transformation from that of discrete, linear, progressive transition to the 'ballooning' imagery conjured by Bergson (1934) when he wrote: 'Reality is global and undivided growth, progressive invention, duration: it resembles a gradually expanding rubber balloon assuming at each moment unexpected forms' (pp. 95–96). James (1910) also made the same point when he observed that creative change does not occur in 'jumps or jolts'. Instead 'it leaks in insensibly . . .

for the fatally continuous infiltration of otherness warps things out of every original rut' (p. 350). Whitehead (1929), on his part calls this process 'concrescence': that self-creative activity in which, through the spontaneous aggregation and subordination of antecedent events into an integrative unifying act, a novel entity is created. This is because change and transformation, above all, is that which 'prolongs the before into the after and prevents them from being pure instantaneous presents' (Bergson in Alexander, 1958, p. 22). Thus, each moment of duration absorbs the preceding one, transforming it and in that very process transforming itself. Likewise, for Whitehead (1948):

'The future is there in the present, as a general fact belonging to the nature of things. It is also there with such general determinations as it lies in the nature of the particular present to impose on the particular future which must succeed it. All this belongs to the essence of the present, and constitutes the future, as thus determined, an object for prehension in the subjective immediacy of the present. *In this way each present occasion prehends the general metaphysical character of the Universe.*' (Whitehead, 1948, p. 226, emphasis added)

Thus, the future has an objective existence in the present. But the objective existence of the future in the present differs from the objective existence of the past in the present. In the latter case, the various actual occasions of the past are severally functioning as objects for absorption into the present. 'This individual objective existence of the actual occasions of the past, each functioning in each present occasion, constitutes the causal relationship which is efficient causation' (Whitehead, 1948, p. 227). On the other hand, there cannot be any actual occasions in the future, so that what is 'objective' about the future in the present is:

'. . . the necessity of a future of actual occasions, and the necessity that these future occasions conform to the conditions inherent in the essence of the present occasion. The future belongs to the essence of present fact, and has no actuality other than the actuality of present fact. *But its particular relationship to present fact is already realised in the nature of present fact.*' (Whitehead, 1948, p. 227, emphasis added)

Immanence is implicated in the constant building up and breaking down of actual entities; the ceaseless process of assembly, disassembly and reassembly which enables us to differentiate the past from the present and the present from the future. In the course of this gestative formation it gives rise to the emergence of novel possibilities but always necessarily circumscribed by its formative influences.

Each organizational effect, such as is illustrated by these examples, bears the inevitable impress of preceding organizational assemblages of material and social elements, from which the present configuration has evolved, which, thereby both limits and enables the possibilities for future potential configurations to emerge. This way of viewing socio-technical processes, sensitizes us to how individual organizational acts create ripple effects which reach out far beyond their spatial and temporal scene of initiation.

A 'rhizomic' model of organizational change

'A rhizome as subterranean stem is absolutely different from roots and radicles . . . The rhizome . . . assumes very diverse forms, from ramified surface extension in all directions to concretion into bulbs and tubers. The rhizome includes the best and the worst.' G. Deleuze (in Boundas, 1993, p. 29)

The French philosopher and social critic Michel Foucault once made the prediction that one day this century will be known as Deleuzian. This may seem astonishing to some considering that, outside of French post-structural interests, many might not have even heard of Deleuze, let alone read and understood his works. However, it would be more helpful to think of Deleuze as continuing (and thereby discontinuing) in the tradition of the process philosophers whose work we have previously discussed at some length. That Deleuze has been substantially influenced by these thinkers is clearly reflected in his extensive and sympathetic commentaries on the works of Leibniz and Bergson in particular.

Deleuze's main preoccupation and theoretical intervention into the world of ideas is his enduring concern with the articulation of an adequate theory of change and transformation. A theory of

pure heterogeneous becoming which would, with an alternative vocabulary, be capable of resisting all 'identitarian pressures' (Boundas, 1993, p. 5). It is precisely for this reason that Deleuze offers a lifeline for the alternative conceptualizing of organizational change in a way that cannot be hijacked by the systematic reductionism of modernist thought.

The 'rhizomic' model of change encapsulates principles that are consistent with and derived from the three key axioms of process metaphysics: heterogeneous becoming, otherness and immanence. Rhizomes usefully depict the essentially heterogeneous and indeterminate character of reality. One of its central operating principles is that unlike the root-tree which plots a point and fixes an order, spreading outwards predictably according to a binary logic that breaks out from one to two, then from two to four, and so on, the rhizome connects any point to any other in an essentially heterogeneous collective assemblage of occurrences which we call 'bulbs' and 'tubers'. Thus, even some animals in their pack form, like rats swarming over each other are rhizomic in character. The basic principle is, therefore: 'any point of a rhizome can be connected to anything other, and must be' (Deleuze, in Boundas, 1993, p. 29). A rhizome, ceaselessly establishes connections between 'semiotic chains, organizations of power, and circumstances relative to the arts, sciences and social struggles' (ibid., p. 30). Each of these, in turn, must be understood as a tuber comprising agglomerations of very diverse acts that are not merely 'linguistic, but also perceptive, mimetic, gestural and cognitive' (ibid., p. 30). Thus language, social practices and idealisms, stabilise around 'a parish, a bishopric, a capital. It forms a bulb' (Deleuze, in Boundas, 1993, p. 30). Change is subtle, agglomerative, often subterranean and heterogeneous. It spreads like a patch of oil. Change takes place by variations, restless expansion, opportunistic conquests, sudden captures and offshoots. Rhizomic change is *anti-genealogical* in the sense that it resists the linear retracing of a definite locatable originary point of initiation.

Change according to this Deleuzian formulation is also multiple, unending and unexpectedly other. There is no unitary point to serve as a natural pivot for constructing subject and object, for drawing boundaries that define inside and outside and that distinguish 'macro' from 'micro'. These are the linguistic conventions that derive

from a logocentric orientation. Instead, multiplicities have only densities, determinations and lines of connections which ripple outwards. The idea of net-*workings* better encapsulates the transformative capacity of this Deleuzian conception of change. 'There are no points or position in a rhizome, such as those found in a structure, tree, or root. There are only lines' (Deleuze, in Boundas, 1993, p. 31). These lines of development are never simply predetermined in any strict causal sense. They merely express the fields of possibilities for becoming to take place. Change, renewal and transformation develop along locally identified lines of least resistance rather than according to any pre-designed template.

In many senses, this probabilistic attitude to how change does occur is reminiscent of Prigogine's (1996) powerful explanation of irreversibility and indeterminacy in modern theoretical physics. For Prigogine, the classical laws of physics describe an idealized, stable and hence predictable world that is quite different from the unstable evolving world that characterizes particularly living systems. It is only through open-ended irreversible processes that nature has been able to achieve 'its most delicate and complex structure. Life is possible only in a nonequilibrium universe' (Prigogine, 1996, p. 27). If we accept these radical claims, it means that the laws of nature can no longer be formulated in terms of certitude, but rather in terms of *possibilities*. Because of the inherent instability of change and transformation, we can no longer chart out a single trajectory along which change will occur. Instead we need now to think in terms of the multiple trajectories of 'probability clusters'.

> 'The initial condition is no longer a point in the phase space but some region described by ρ at the initial time t = zero. We thus have a *nonlocal* (i.e., non-simply locatable – RC) description. There are still trajectories, but they are the outcome of a stochastic, probabilistic process.' (Prigogine, 1996, p. 37, emphasis in the original)

Likewise, instead of thinking in terms of classical causality, we now need to invoke the notion of *resonance* as a way of explaining how phenomena, events and entities are 'coupled' together. Resonance produces a 'coupling of events loosely analogous to the coupling of sounds by resonance. This leads to new, non-Newtonian terms that are *incompatible with a trajectory description* and instead require a . . . probabilistic description' (Prigogine, 1996, p. 42, emphasis in the original). Outcomes of change can, in principle, be always 'other than' that which is expected. The element of *surprise*, and hence creativity and novelty, is necessarily built into the very core of change and transformation.

In his recent discussion of complexification as the way towards a 'science of surprise', the scientist and popular writer John Casti (1995), makes the useful point that it is the limits of language which serves as the deep reason for the emergence of surprise (p. 8) in our comprehension of the workings of nature. Because we insist on encoding our experiences of the real world into our artificially constructed symbols and rules in order to produce a model of nature, we inevitably create distortions. Surprise, therefore, arises only because our models are unfaithful to the dynamic and evolving character of nature. It is this surprise of *otherness*, of unexpected and unanticipated outcomes which is intrinsic to our comprehension of change. In other words, a definitive quality of real change is its unexpected and surprising, and hence unpredictable nature. In his marvellous Foreword to Prigogine and Stenger's (1984) *Order out of Chaos*, the futurist Alvin Toffler succinctly captures this new-found appreciation of the paradoxical nature, and the inherent tensions between chance and necessity in change and transformation. He writes:

> 'For if Prigogine and Stengers are right and chance plays its role at or near the point of bifurcation, after which deterministic processes take over once more until the next bifurcation, are they not embedding chance, itself, within a deterministic framework? By assigning a particular role to chance, don't they de-chance it? This question, however, I had the pleasure of discussing with Prigogine, who smiled . . . and replied, "Yes, That would be true. But, of course, we can never determine when the next bifurcation will arise". Chance rises phoenix-like once more.' (Toffler, in Prigogine and Stengers, 1984, p. xxvi)

Chance and necessity are not polar opposites. Rather they implicate and structure the possibilities for one another. Chance and necessity are other to each other and express themselves through the operation of change. In the language of process metaphysics, we can say that *chance leans towards* otherness, *necessity leans towards* immanence. Thus, the change in continuity (otherness) and the continuity in change (immanence).

Rethinking organization/change

It is clear from our reformulation of change and transformation in terms of a *metaphysics of change/process* that change, surprise and unexpected novel outcomes are the *sine qua non* of living systems, including especially social reality. Yet such notions must not be simplistically understood in conventional dualistic terms. Change implicates its other. That other is *organization*. Organization, therefore, is not a 'thing' or 'entity' with established patterns, *but the repetitive activity of ordering and patterning itself*. It is the active intervention into the flux and flow of the 'real' in order to abstract pattern and coherence out of an essentially undifferentiated and indifferent whole. This is what Kanter, Stein and Jick (1992) did not quite appreciate when they insisted on only attending to the already-patterned. By so doing, they betray their metaphysical preference for construing organization as a 'thing' with predefined patterned relations. For process thinkers, however, organization is *stabilizing* and *simple locating*. The ontological act of organization is an act of arresting, stabilizing and simplifying what would otherwise be the irreducibly dynamic and complex character of lived-experience. Organization is an inherently simplifying mechanism, and the idea of 'complex' organization(s) is in effect an oxymoron. It is none other than a 'counterfeit' version of real dynamic complexity rendered static by applying the pre-cast symbols of representation in order to produce the kind of taxonomic complexity[7] characterizing late modernity. Likewise, the idea of 'organizational change' as conventionally understood is an oxymoron as well. For, organization acts to arrest and convert the otherwise wild and infrangible forces of nature into a more predictable and, hence, liveable world. Acts of organizing, much like the ceaseless building of sand-dykes to keep the sea at bay, reflect the ongoing struggle to tame the intrinsically nomadic forces of reality. This creative tension between natural change forces and the cultural forces of organization is what accounts for civilizational progress and novelty-creation.

We are, thus, led to realize that all of the social reality that we find so immediately necessary and familiar, and to which we often attribute an independent existence, is real only to the extent that it comprises the collective aggregation of habituated social norms and behavioural codes, which sustains a regular coincidence between a representation and that which a particular society takes to be its reality. Such a coincidence must be understood as analogous to the situation of two trains travelling at the same speed along parallel tracks. To passengers in either of the trains, the other train is, to all intents and purposes, stationary. Thus, we are able to reach out to one another, communicate through language and act on things only because our relative speeds of change have been artificially arrested through organizational acts of stabilization and simple location. Each organizational act facilitates simple location and produces a representation which locates it outside the durational experience. Through such proliferation of representations and their storing up in a collective repository, an increasingly larger number of coincidences are established thereby creating a sufficient density of interactional events which, in turn, precipitates the social habits that, collectively, makes society possible. Thus a socially constructed reality, *alienated* from our raw experiences, is achieved in which all those practical norms that govern the stance of human beings towards one another and towards their particular historical environment become more and more established. The slow and complex evolutionary formation of modes of thought, codes of behaviour, social manners, dress, gestures, postures, the rules of law, ethical codes, disciplines of knowledge and so on, serve to orient us towards our environment and towards others in our social interactions. These are all effects of modern, social organizing. Organization exists as islands of order in a sea of chaos and change.

It is this 'meta' approach to the understanding of organization as a complexity-reducing and reality-constituting activity which marks process thinking from the preoccupation of the traditional organizational sciences. Organization, in this sense, is about 'world-making'. It acts *against* the forces of change, not *with* them. It is precisely this *unnatural* stabilizing of the immanent forces of change which has precipitated the conditions for modernity and its achievements and consequences.

Organization is what makes possible the dominant world-view in which entities appear as self-evidently separate and isolatable and hence

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[7] For a more detailed treatment of the idea of 'taxonomic complexity', see Chia (1998).

manipulatable in unproblematic terms. It is, however, important to remember that: 'The concept of the entity can be preserved only by an optic that casts around each entity a perceptual frame that makes a *cut* from the field and immobilises the cut within the static framework' (Bryson, 1988, p. 97). As soon as the frame is weakened or withdrawn, the object becomes temporally entwined with its past and future as part of a mobile continuum that refuses logical differentiation in any simple manner. Take for instance, a flower, its existence is only a phase of the evolving transformation between seed and dust 'in a continuous exfoliation or perturbation of matter' (ibid., p. 97). It cannot be said to occupy a single location since it is always implicated in the universal field of transformation of which it forms a part. The form of the seed is always already turning itself into a flower and the flower becoming dust so much so that 'The present state of the object appearing as the flower is inhabited by its past as seed and its future as dust, in a continuous motion of postponement, whose effect is that the flower is never presently *there*, any more than seed or dust are there' (Bryson, 1988, p. 99). The forces of change are immanent in each phase of an entity's becoming and perishing.

Organization, therefore, is an ongoing *change-resisting* and, hence, reality-maintaining activity which stabilizes the 'real' sufficiently for us to act purposefully in response to a deluge of competing and attention-seeking external stimuli. Simplification of the dynamically complex and the consequent economizing of effort in action are thus the ultimate aims of the impulse to organize. Through organization, the various facets of our experiences, including our experience of self, acquire immediate and unproblematical self-identity and hence avail themselves to instrumental manipulation.

What this means is that 'organizational change' is not something that needs deliberate intervention or orchestration. Instead, merely *relaxing* the deeply entrenched organizational and institutionalized habits, which keep 'organizations' together and which enable them to be thought of as 'thing-like', is itself sufficient to allow change to occur of its own volition. It is this 'hands-off' attitude towards organizational change which is the implicit advocacy of this process metaphysical mindset. It recognizes that change is always characterized by restless, heterogeneous movement, unexpected otherness and novelty, yet

immanently and richly circumscribed. This recognition, in turn, promotes the idea of change initiations from peripheral and marginal or *decentred* locations, so that the heterogeneity of change initiatives is maintained. It also acknowledges the necessarily creative nature of organizational evolution, not in the linear, predictable manner often associated with the evolutionary process, but in the unexpected and surprising way in which evolutionary change actually does occur. As the socio-biologist Brian Goodwin (1994) so nicely captures it in his recent book, *How the Leopard Changed its Spots*, evolutionary processes are marked not so much by predictable patterns, but by surprising and unexpected developments. Thus:

> 'As organisms change, evolving into different varieties and species with adaptation to particular habitats, the evolutionary scenario changes: the fitness landscape itself undergoes modification as species evolve and create new opportunities for survival. Trees modify and enrich the soil by dropping their leaves and producing organic compost that retains water, so forest systems such as the Amazon develop on originally extremely poor soil, creating conditions for the stunning variety of species that has emerged in this vast ecosystem.' (Goodwin, 1994, p. 156)

Goodwin's vivid description provides an exemplary case of the surprising and unexpected nature of organizational change and transformation. Had we not the sophisticated science of today at our disposal, we would never have been able to conceive of the originally poor conditions which gave rise to the magnificence of the Amazonian rain forests. This dramatic metaphor of creative evolution should provide us with an alternative appreciation of how organizational change does actually occur, in contrast to the linear, static models currently on offer.

Conclusion

We are not good at thinking movement and change. Despite recent attempts to conceptualize organizational change in processual terms, contemporary models of organizational change remain, for the most part, trapped in a Parmenidean intellectual legacy which implicitly elevates permanence over change, discreteness over immanent

interconnectedness, linear progress over hetero-geneous becoming, and equilibrium over flux and transformation. A major consequence of this still-dominant metaphysical orientation is that change is perceived as an epiphenomenon of primary unchanging entities. Thus it is organization which is privileged in the expression 'organizational change'. The underlying implication is that there are existing, discrete, social entities called 'organizations' which 'evolve' from one stable state to another. Such an orientation misses the truly dynamic character of social and material reality. From the perspective of a *metaphysics of change*, on the other hand, it is change which is natural and primary and 'organization' is seen as a secondary and artificially-imposed attempt to arrest and stabilize what is essentially a ceaselessly fluxing reality indifferent to our causes. Organization is a human accomplishment, and one very necessary in order to extrude a more stable, familiar and liveable world from an essentially undifferentiated reality. Organization, as such, is first and foremost about 'organizing social worlds' and not primarily about the functional effective deployment of limited resources. It is organization, not change, which is the exception.

Moreover, change is essentially multiple and heterogeneous and displays a creative tension with continuity through the notion of 'immanence' and 'otherness'. In real change, past, present and future are immanently telescoped into one another thereby resisting the popular attempt to conceptualize duration and temporality in linear discrete terms. Change always implies 'surprise' and otherness because of its essentially indeterminate character. For despite the belief in our ability to detect 'trends', what actually does happen is always a unique and never-to-be-repeated coalescence of a multiplicity of potentialities. Change is essentially 'rhizomic' in nature. Evolutionary emergence does not occur in a linear stage-like manner. Rather *creative evolution* is what best describes the outcome of the creative tension between 'organization' and 'change'.

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