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# Have We Been Too Successful in Making Corporations Organism-Like?

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This paper questions the persistent prescription, which has now also received a fillip from “new science”, for corporations to be more like organisms, especially in response to turbulence in the business environment such as exists in present times. We contend that another outcome of the prevailing turbulence, the trend towards the organizational career being outmoded, is particularly ironic because the organizational career, we argue, has been the organizing device that helped corporations become organism-like and more. It has done so in three significant ways: in developing the capacity to outlive their constituent individuals, just as multi-cellular organisms outlive their cells; in developing purposefulness—the capacity to choose and set goals of one’s own accord; and in developing even higher flexibility than organisms. Finally, alluding to misgivings about prospective organism-like physical artifacts, the paper suggests deeper studies on the social artifact, the corporation, as being already too organism-like.

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## INTRODUCTION

A futuristic essay, published in the science journal, *Nature*, has called for deeper reflection about making artifacts more and more like organisms. In that not-too-distant scenario, ever newer innovations in computer science, biochemistry, and nanotechnology, have led to the creation of Linked Electronic-Organic systems (LEOs). These human-like entities are «complete organisms», with their own wants and aspirations. They then ask for citizenship—of the country of their origin, the USA—and one of them also announces an «intention to run for president» (Anderson, 2000: 281).

Perhaps the need for reflection is no less when the organism-like artifacts are not physical, like LEOs, but social, like corporations, as this paper suggests through an examination of the organizational career. The paper contends that the organizational career has been an important organizing device in making corporations quite like organisms, and more. Thus the paper argues that most corporations have actually for long been very much like organisms, including, even, the highly bureaucratic form, which from the dawn of management has been likened to a machine, and whose design has been often seen as the very opposite of organisms (Weber, 1946; Burns and Stalker, 1961). Three propositions are advanced, which relate to these contentions. In conclusion, referring to the outmoding of the organizational career in the wake of the present turbulent environ-

ment (Arthur and Rousseau, 1996; Osterman, 1996; Capelli, 1999; Walsh, 2001), the paper wonders whether this is in fact a consequence of our being too successful in making corporations organism-like.

The issue gains a higher significance because, over the years, many management and organization thinkers have urged for the corporation to be designed more like organisms, and not machines, especially when the outside environment is turbulent (for example, see the review in Morgan, 1986). Recent and protracted all-round turbulence in the business environment has been no exception (Daft, 2001).

These exhortations have received an additional fillip with the rise of “new science” at about the same time, and the move to go beyond Newtonian ideas which are being associated with an excessively mechanistic world-view. This is seen in influential works like the writings of Margaret J. Wheatley (1994, 1996), a pivot for this special issue (Bird, Gunz, and Arthur, 2002), who strongly argues that most corporations have continued to be mistakenly designed like machines, as a legacy of the Newtonian mind-set in management, when they should instead have been like organisms (Wheatley, 1994). The paper suggests that such views may require closer scrutiny.

Organisms, physical artifacts like LEOs, and also social artifacts like corporations may all be seen as examples of “complex adaptive systems”, whose studies Murray Gell-Mann (1994)—Nobel laureate physicist and now a leading luminary of “new science”—has championed. This paper suggests that they may be usefully examined along the two attributes, “purposefulness” and “complexity-grappling capability”. These attributes, as noted in the next section, are among the defining characteristics of organisms. These are then also shown to have arisen in corporations.

## **SPONTANEOUS AND DELIBERATE ORDER**

Among the various ideas in the loose assemblage that is “new science”, a central theme is the spontaneous emergence and persistence of order in nature, most remarkably as and in organisms. It is also perhaps this wonderment which has kindled the interest of Wheatley (1994) and other workers from management and the social sciences. Why should the spontaneous emergence of organisms be so startling? There are many reasons, including the wonderment of life emerging from non-living constituents. But a central one is around the hallowed principle of entropy, also known as the Second Law of Thermodynamics.

One way to visualize the law of entropy is that realities do not spontaneously move to higher levels of order; they remain either at the same level or move to lower levels. Consistent with the law is the commonplace observation that a broken glass jar would not spontaneously become whole; it would remain at the same level of order, and by and by move to still lower levels.

Arthur Eddington, among the foremost physicists of the previous century and a noted commentator on science, is said to have observed that a new idea may challenge any of the established laws and theories and still deserve a serious consideration; except for one: if it is «against the Second Law of Thermodynamics, I can give you no hope; there is nothing for it but to collapse in deepest humiliation» (Coveney and Highfield, 1990: 33).

Spontaneous emergence of organisms in nature is so startling because, seemingly, it appears to go contrary to this hallowed law. Ontogenic evolution, as from child to adult, and phylogenic evolution, as from the early primates to humans, represent the puzzling emergence of even higher levels of order.

Science has offered ever richer explanations as to how such wonders may be possible (see reviews in Prigogine and Stengers, 1984; Gleick, 1987; Schrödinger, 1992; Gell-Mann, 1994). But the wonderment persists; as Wheatley (1994: 19) asks: «If entropy is the rule, why does life flourish?» By the same count, the seemingly ordinary capacity of humans and other organisms to deliberately create order, as in making an artifact, is perhaps even more startling. Since the existence of organisms is itself surprising, given nature's propensity to disorder, the organism's own capacity to create order for itself, at will, is all the more amazing.

In his work towards a general theory of living systems, the Nobel Laureate biologist Jacques Monod observes that: «Every artifact is a product made by a living being which through it expresses, in a particularly conspicuous manner, one of the fundamental characteristics common to all living beings without exception (...) We shall maintain that the [living beings] are distinct from all other structures or systems present in the universe by this characteristic property which we shall call *teleonomy*» (Monod, 1972: 20; italics in the original). Teleonomy may be paraphrased as the capacity to seek goals, independently. The goals may include, according to Monod (1972), virtually all projects or pursuits of a living being: from the making of artifacts by beavers, to the metabolism process in bacteria.

Chakrabarti and Chakrabarti (1999) suggest that perhaps there are two distinct kinds of teleonomy or independent goal-seeking capacity. They tentatively call them, «autonomic teleonomy», being more involuntary, and «conscious teleonomy», being more deliberate. For example, the goal-seeking involved in the complex metabolism process within the organism relates more to autonomic teleonomy; whereas goal-seeking as in food gathering from the outer environment relates more to conscious teleonomy.

They further suggest that conscious teleonomy may in turn be unbundled into two distinct, complementary attributes: one, the capacity to choose and decide on a purpose; and the other, the capacity to pursue a purpose, grappling with the various complexities on the way. For example, a robot or a computer possesses varied levels of the latter attribute, which the Chakrabartis (1999) call «complexity-grappling capability». But they do not (as yet) possess the former, which Chakrabarti and Chakrabarti (1999) contend as

identical to «purposefulness». An entity is purposeful if it can choose and set goals of its own accord. The attribute is already well-noted in writings in management (Ackoff, 1981; 1994; 1999), and systems thinking (Ackoff and Emery 1972; Flood and Jackson, 1991; Checkland, 1994); similar ideas are also present in other literatures, such as organization theory (Barnard, 1938; Cyert and March, 1959), motivation theory (Locke and Latham, 1996), and economics—especially the so-called “Austrian school” (Ekelund and Hebert, 1997).

Autonomic teleonomy may be readily seen as associated with the development and maintenance of order within the organism itself. Purposefulness and complexity-grappling capability, besides supplementing autonomic teleonomy, also enable the organism to do an amazing variety of deliberate order creating activities in the surrounding environment. Artifact making is indeed «a particularly conspicuous» example (Monod 1972: 20).

## **ORGANIZING AS SOCIAL ARTIFACT MAKING**

Making physical artifacts—«whether a honeycomb, a dam built by beavers, a paleolithic hatchet, or a spacecraft» (Monod, 1972: 21)—is just one category of deliberate order creating activity. Below we consider another, “organizing” (Weick, 1969), which, for our present purpose, may be seen as the activity of engaging in deliberate collective formation, typically with fellow members of the same species, to create a social artifact, such as organizations.

It may be useful to briefly first consider machines. Like other physical artifacts these also represent order created deliberately from inanimate matter. Yet these are distinct from a nest, a tool, or a sculpture. What distinguishes them? Machines are physical artifacts which have been equipped with varied kinds and levels of complexity-grappling capabilities, including, at times, the capacity to make other artifacts. Thus with their complexity-grappling capabilities, machines support humans’ purposefulness by pursuing the goals set for them.

Similarly, social artifacts—such as organizations—have also been equipped with varied kinds and levels of complexity-grappling capabilities to pursue goals set for them. Only humans, and rather recent humans at that, have been able to create machines. But organizing is perhaps a much older phenomenon, observed in even very primitive organisms. Consider the case of *Dictyostelium discoideum*, a unicellular amoeba (Ivanitsky, Krinsky, and Mornev, 1987: 72; Coveney and Highfield, 1990: 230-1).

When food is plentiful, these move about singly, ignoring one another. However, when the food supply runs short, a large number of them (around 100,000), through a set of extremely intricate processes taking several hours (a very long period, from the amoeba’s time-frame), organize themselves into a single multi-cellular system, called Plasmodium. Unlike the amoeba, this entity has differentiated

locomotion organs with which it «starts moving in search of food», doing this «faster than an individual ameba would» (Ivanitsky et al., 1987: 72).

The Plasmodium may be seen as a social artifact, made of and by the amebas, to attain a common goal. The close correspondence with the social artifacts we humans create, such as organizations, is worth noting. For example, writing on why we at all need to create organizations, Weiner (1960: 148) notes: «The purpose of all organizations is to deal with a set of externally imposed conditions which the individual is incapable of handling by himself and which require integration of his activities with the activities of others. If the organization is to succeed, the individual must replace his independence and autonomy of function with cooperative actions». Clearly, this would hold just as well for the amebas creating the Plasmodium. Acute food scarcity is the external condition, requiring an effective and efficient search, far and wide, for new food stores. The individual ameba is incapable of handling this singly, but creating the Plasmodium significantly enhances the likelihood of success.

W. Richard Scott's (1992: 29) observations on organizations, in his text-treatise on the subject, also correspond very well to the Plasmodium: «From the rational system perspective, organizations are instruments designed to attain specific goals». Further, Scott (1992: 23) distinguishes such «instruments», or artifacts, from other types of collectivities: «It is the combination of relatively high goal specificity and relatively high formalization that distinguishes organizations from other types of collectivities (...) such as primary groups, families, communities».

The Plasmodium would fulfil both these criteria because it clearly represents very high formalization, as for example, in the making and functioning of the limbs, deliberately designed and developed by the amebas to ensure faster movement. The Plasmodium is also mandated to pursue a specific goal—locating and reaching a new food store as soon as it can. The goal specificity is particularly noteworthy. Having «located a food store, the Plasmodium “breaks down” into free amoebas which resume their individual existence» (Ivanitsky et al., 1987: 72), feasting voraciously.

It may be useful to note that the Plasmodium has been endowed by the amebas with only complexity-grappling capability, of a certain kind, but no purposefulness. Thus, quite like the machines that we humans have made to date (as distinct from, for example, the futuristic LEOs), the Plasmodium cannot choose and set goals of its own accord. It can only help pursue the specific goals set for it.

Undoubtedly, the attributes purposefulness and complexity-grappling capability have reached a very advanced level in humans (Chakrabarti and Chakrabarti, 2001). This is also reflected in the prodigious advancement in the making of artifacts: not only physical, but also social. The latter has involved the innovation of varied organizing devices, which in turn enabled the creation of ever newer kinds of organizations. We next consider the organizational career as one such important innovation.

## **ORGANIZATIONAL CAREER AND THE "EVER-MOVING" CORPORATION**

Discussions in the recent years around the "boundaryless career", by drawing a contrast, actually help sharpen the longstanding view of careers as "bounded" or "organizational" (Arthur and Rousseau, 1996), which is our present focus. Further, the commentators on this new trend clearly emphasize the continuing importance of the organizational career «as a legitimate base of enquiry» (Arthur and Rousseau, 1996: 6).

The phenomenon of career has rightly been seen as «slippery to grasp» (Bird et al., 2002: 3). But there is a wide consensus around one distinguishing feature: that it is a two-faced one. Thus the Chicago sociologists have seen career as a «Janus-like concept that oriented attention simultaneously in two directions» (Barley, 1989: 45); Schein (1997: 38) refers to the «internal and external meaning» of career; Arthur and Rousseau (1996: 15) distinguish career studies from related social science by this «duality of perspective».

For the organizational career, perhaps this unique duality arises because it represents a dynamic frame connecting two entities, the individual and the organization. The dynamic frame comprises a sequence of roles and movements, typically lateral and also upward, though the actual pattern may be much more complicated (Kanter, 1977). The two perspectives follow from the two entities which it connects—the individual and the organization—and though not always, there «will usually be some correspondence» (Schein, 1997: 39) between them. Indeed career management, as an ongoing organizing activity, is seen as designing and implementing the dynamic frame in a way that optimizes both the changing needs of the organization and the evolving preferences and capabilities of individuals (Herriot, 1996). This is why we refer to the organizing device as: the organizational career as a connecting dynamic frame (OCCDF).

While very many species show organizing activities (*Encyclopaedia Britannica*, 1987), we see no phenomenon like the OCCDF in them. Indeed, even for humans we find that the phenomenon appears very late, much after the origin of civilizations, only with the creation of special organizations such as the army, the civil bureaucracy, and the Church. Proliferation of the OCCDF happens still later—after the rise of corporations and the era of organizational society (Thompson, 1967; Scott, 1992; Miles and Snow, 1996).

What distinguishes these organizations? Clearly they are very large and complex. But even the *Plasmodium* is complex, especially vis-à-vis the constituting entities, unicellular amebas, and it is certainly very large, with a membership of more than 100,000 individuals. Yet they have nothing like the OCCDF.

A central distinguishing feature, we suggest, is to do with the expected life-span for which the social artifact has been designed. We suggest that it is with these organizations characterized by the OCCDF, that, perhaps for the first time, any organism succeeded in deliberately creating social artifacts which may outlive any of the constituent indi-

viduals. Thus new individuals join the artifact knowing that it has existed before their joining, and/or is likely to continue to exist even after they leave. Max Weber, «the godfather of organization theory» (Scott, 1994: 3), has described such an organization as an «ever-moving mechanism» (Weber, 1946: 228), meaning that it could be indefinitely ongoing. We suggest that the organizing device OCCDF contributed to this capacity: “ever-moving”.

It would be of interest to note that natural organisms also have the capacity to outlive their individual cells, if multi-cellular, and the individual molecules, if unicellular. Thus the OCCDF enabled the organization to be quite like the organism on this count; actually more, because unlike organisms, these social artifacts could potentially outlive endless batches of individual members.

To appreciate the enormity of the organizing feat, and to also further the comparison with the organism (say, multi-cellular) on this attribute, consider just the following two design requirements which are by no means exhaustive:

- regular development of varied specialized cells/individuals of the appropriate quality and quantity, even as the organism/organization goes about its usual activities;
- periodic and highly efficient replacement of the specialized cells/individuals, so that even as batches of them get phased out, the organism/organization maintains a steady state.

These and other related processes take place spontaneously within the organism (Maturana, Mpodozis and Letelier, 1995). For example, the cells are not required to be deliberately trained in their skills, no matter how high the specialization, nor periodically re-trained to take up other lateral or yet more critical responsibilities. Similarly, the high compatibility—or what Williamson (1996) may call, “asset specificity”—between the cells and the organism does not need to be deliberately nurtured; the cells come coded to be highly asset specific vis-à-vis the organism. Even the periodic replacement of cells, while the organism continues with its usual activities, does not need to be deliberately governed.

When the individual members of a species try to create a social artifact which may outlive the very constituent individuals, these and other design challenges have to be deliberately solved. This makes the achievement that much more remarkable. We suggest that the innovation of the organizing device OCCDF helped achieve most of these design challenges.

Thus with the spread of the corporate world, the organizing device came to be almost as ubiquitous as the “ever-moving” corporations themselves. Consider the five generic configurations into which, following Mintzberg (1979, 1991), the myriad organization designs of actual corporations have been often classified (Daft, 1998; Robbins, 1998). These are: entrepreneurial structure, machine bureaucracy (also called the functional form), professional bureaucracy, divisional form, and adhocracy—of which the matrix design is an important subset. Apart from firms that are entrepreneurial, or such adhocracies as are intended for rather short duration—both may be seen as not quite “ever-moving”—corporations with organization designs within any of

the other configurations, or their combines, are characterized by the OCCDF. Accordingly, Miles and Snow (1996: 102) note the continued relevance of the organizational career even as the «organizational forms evolved from functional to divisional and matrix».

We thus propose:

*Proposition 1: It is perhaps with the innovative device of the organizational career as a connecting dynamic frame (OCCDF) that social artifacts developed the capacity to outlive their constituent individuals, similar to the natural organisms, which can also outlive their constituent cells/molecules; and even more, because the OCCDF enabled organizations, like, for example, corporations, to outlive potentially endless batches of constituents, thus giving them the capacity to be “ever-moving” (Weber, 1946: 228).*

## **ORGANIZATIONAL CAREER AND THE PURPOSEFUL CORPORATION**

Besides enabling the organization to outlive its constituent individuals, the OCCDF also helped it to be like the organism in another important way. As we argue below, it contributed to the transition from being mere «instruments designed to attain specific goals» (Scott, 1992: 29)—like any other artifact, social or physical—to being able to choose and set goals of its own accord. In other words, the organization could also become purposeful, quite like the natural organism.

Visualize a hypothetical scenario in which, through richer organizing innovations, amebas have enabled the Plasmodium to outlive any individual ameba. Entire batches of amebas, who together made the Plasmodium, may get phased out but the Plasmodium continues in its pursuit. Newer amebas join the Plasmodium knowing that it has been in existence before them, pursuing goal(s), and that it may continue to do so after them. Thus, no individual ameba, nor even a cohort, may now be able to fully use this “ever-moving” Plasmodium as an instrument. Whether endowed by design or by default, such a hypothetical Plasmodium may be seen as possessing some autonomy of its own, over and beyond the constituting cells, like the natural organism.

The organizing device OCCDF opened up such a possibility for organizations. Thus, Scott (1992: 338) observes that these organizations «are composed not of persons but of positions», slots in the OCCDF, which individual persons might fill from time to time. «Persons contribute to and invest in organizations specific resources over which they lose full control».

The initial organizations with the OCCDF, not just the army or the Church but even the early corporations, were institutionally confined to a narrow set of goals and domains of activities. With changing institutional arrangements, and especially in the run-up to the industrial revolution and thereafter, more and more areas of pursuit became legally permissible for the corporation (Coleman, 1974; Scott, 1992). In 1886, «the US Supreme Court ruled for the first time that a corporation should be construed as a person» (Ackoff, 1994: 12), and was there-

by entitled to all the constitutional rights and protections extended to individual humans.

These developments institutionalized the corporation as a purposeful actor, almost as free to set goals of its own accord as a free citizen. Hence Russell Ackoff (1981, 1994, 1999), a pioneering worker on purposefulness, emphasizes that a corporation ought to be visualized as a purposeful system, comprising of individuals who are also purposeful.

Thus the OCCDF has come to connect two purposeful actors—the natural person and the corporation. The two actors may have quite distinct sets of goals and perspectives. As Scott (1992: 338) notes, «From the perspective of the natural actor, organizations are agencies for achieving desired objectives. However, from the point of view of the corporate actor, (...) individual actors are means for attaining corporate ends».

Once the corporation could choose and set goals of its own accord, especially with the legal entitlement to do so, a typical goal has been to keep itself “alive” (Scott, 1992), quite like the natural organism. However, corporations have been far more successful, at times becoming not just like the living, but literally ever-living (de Geus, 1997). Thus the two capacities which have followed from the OCCDF—to be ever-moving and purposeful—have also reinforced one another.

Before closing this section, it may be useful to note that the actual mechanisms by which the corporation chooses and sets goals—on which there is considerable work (Scott, 1992: 284-301, for example, provides an excellent review)—has not been our concern here. Our interest has been about this artifact gaining a position of significant autonomy of its own; even «independent of the people who founded it or of those who constitute its membership» (Blau and Scott, 1963: 1). More specifically, our focus has been on just one factor contributing to the corporation’s autonomy: the role played by the organizing device OCCDF.

We thus propose:

*Proposition 2: Besides the legal and other institutional changes, perhaps the corporation owes its purposefulness—the capacity to choose and set goals of its own accord—also to the capacity to outlive its constituent individuals, aided by the organizational career as a connecting dynamic frame (OCCDF); in turn, this organizing device has come to connect two purposeful actors, the natural person and the corporation.*

## **ORGANIZATIONAL CAREER AND THE FLEXIBLE CORPORATION**

With the increasing environmental turbulence of recent times, there is a growing view that the corporation with the OCCDF is not flexible enough (Capelli, 1999); in particular, the OCCDF has been critiqued for cramping the individual and also the corporation (Arthur and Rousseau, 1996). Along with it has come the exhortation, as in the influential work of Wheatley (1994, 1996), that corporations should be more like organisms.

Of course, the prescription to be more like organisms, especially for corporations facing a turbulent environment, has a long tradition. For example, Burns and Stalker's (1961) work, noted prominently even in recent texts of organization theory and design (Jones, 1998; Daft, 2001), has seen organization forms as a continuum, with "mechanistic" and "organic" at the two extremes. The former is seen as the ideal type corresponding to a stable environment, and the latter when it is turbulent. Similarly, during the present period of serious environmental turbulence, texts approvingly note the shift in the mindset about corporations, from being «based on mechanical systems to one based on natural, biological systems» (Daft, 2001: 24).

We question the appropriateness of this well-established prescription, especially given the trend towards outmoding of the OCCDF. It may be useful to first note the areas of agreement. We agree that the higher the turbulence in the environment, the lower should be the formalization in the corporation. We do not have any difference with the view that the OCCDF may to some extent cramp the flexibility of both the individual and the corporation: this follows from their interdependence. Nor do we contest that in the present turbulent conditions, the pressure for more flexibility has been an important factor for the outmoding of the OCCDF.

What we think requires further debate is the persistent view that becoming more organism-like is the answer. Because, implicit in it is the notion that these corporations are less flexible as compared to organisms. We wish to argue that the typical corporation, with the OCCDF, in fact, is already in many ways much more flexible than organisms.

We do this by taking the extreme case, the archetypal bureaucratic organization form, which is also perhaps the oldest configuration to be associated with the OCCDF. It has been universally seen as the epitome of extreme formalization and rigidity. In Mintzberg's (1979, 1991) classification, as noted above, it is called a "machine bureaucracy". One of the earliest theorizations on bureaucracy, and perhaps still the most influential, the work of Weber (Giddens, 1983: 202), makes a direct connection with mechanization: bureaucracy, he says, is a «human machine».

Weber further observes that the bureaucratic form reduces the constituent individual to a mere «cog in an ever-moving mechanism» (Weber, 1946: 228). Wheatley (1994: 12) echoes the same view in her comment on contemporary corporations, many of which actually have much more flexible organization designs than the machine bureaucracy. She laments that individuals in most present corporations have to function «as though they were cogs in the machinery», and urges for more organism-like designs.

We wish to argue that in at least four important ways cells in the organism enjoy less flexibility than the individuals in even the machine bureaucracy, as summarized also in **Table 1**. One, lateral mobility of the individual constituent, is uncommon in the case of the organism; for example, a skin cell of a particular finger does not in the course of routine get a transfer to the skin tissues of even another

er finger. Whereas an equivalent mobility is common, and in fact routine, within the OCCDF in the machine bureaucracy. Limited lateral mobility may be seen in the brain, say, when other neurons take up the role of a damaged part, but that is not a routine occurrence (Rose, 1976).

Two, vertical mobility is also uncommon in the case of the organism; a skin cell does not get “promoted” to become, say a bone cell, let alone a liver or a brain cell. Whereas an equivalent mobility is routine in the other case; for example, very many of the top management in such corporations have started at a rather junior level. If we consider the army, which is among the oldest and also purest examples of the machine bureaucracy, the General would have joined as an officer of the lowest rank, or even as a soldier. Limited vertical mobility may be seen in organisms, when a stem cell becomes a specialized cell. But these are more like a single promotion in an entire lifetime, or rather, like graduating from apprenticeship to an actual posting to be held for life; not the sequence of promotions that may be typical of the OCCDF in a machine bureaucracy.

Three, inter-system mobility is also uncommon in the case of organisms; cells of one organism do not in the course of routine move to become part of another. Inter-system mobility may not have been possible in the early machine bureaucracies, though for entirely different reasons. That was mainly because there were—and in some cases even now are—no other organizations of the same kind in society to which one could move; for example, there is only one official army in a country. Such mobility, however, has since long been routine in the corporate world.

Finally, a typical cell from a multi-cellular organism can have no existence independent of the system. Whereas an equivalent mobility for various durations, or for good, has been easily possible in the case of the machine bureaucracy, even before the rise of the «boundaryless career» (Arthur and Rousseau, 1996: 3).

In sum, organisms may in many ways be seen as more rigid, formalized and machine-like than even these extreme examples of machine-like corporations. Many of today’s corporations with the OCCDF are of course far more flexible. For example, the matrix form, an adhocracy, has been seen as «almost the opposite of the machine bureaucracy» (Daft, 1998: 559), because of its much higher flexibility.

**Table 1.** Mobility within multi-cellular organisms and bureaucratic organizations

		Multi-cellular Organism	Bureaucratic Organization
Cell/Individual Mobility	Intra-system: lateral	uncommon	common
	Intra-system: vertical	uncommon	common
	Inter system	uncommon	common
	Independent of system(s)	uncommon	common

In a previous section we noted that the OCCDF also contributes to the corporation's purposefulness—the capacity to choose and set goals of its own accord. In turn this has enabled corporations to adapt to their environment in many ways, such as in choosing «whether they are to compete or to collaborate» (Morgan, 1986: 74), or in choosing a new and more desirable environmental niche, or even in changing the environment to their own choosing. Despite the inertial pressures, as well-noted by the population ecology school in organization theory, corporations often do these much more effectively than most organisms (Morgan, 1986: 67-74).

Perhaps the most striking evidence of the corporation's higher flexibility/adaptability, compared to the organism, comes from contrasting the processes of evolution of their design forms. Organisms' designs take millions of years to evolve. The dominant scientific view holds that the organism's own purposefulness plays no part in the process; that is, the design does not change because the organism so chooses, nor is the new design an outcome of the organism's choice (Gell-Mann, 1994). Whereas not only have corporations' designs changed dramatically within the last century alone, corporations have often had a significant say—perhaps even decisive, as some may argue (Morgan, 1986)—on most of the crucial choice related questions, such as, when to change, how to change, and change to what.

Thus Morgan (1986: 68) notes that, unlike the organism, the corporation is «able to transform itself from one kind of organization into another». Indeed, that is how the organizational configurations have evolved, say from the machine bureaucracy to adhocracy, with myriad organization designs within these broad groupings. Many corporations have achieved several such organization design changes in their own life-span—an impossible feat for organisms.

We thus propose:

*Proposition 3: While the persistent prescription for corporations to be more organism-like, especially when the business environment gets turbulent, assumes that they are less flexible/adaptable than organisms, perhaps the opposite is more correct: that is, most corporations, typically with the organizational career as a connecting dynamic frame (OCCDF), are already more flexible/adaptable than organisms; including even the extreme bureaucracy, which from the dawn of management has been seen as the epitome of the machine-like form.*

## **CONCLUSION**

In this paper we have questioned the persistent prescription, which has now also received a fillip from “new science”, for corporations to be more like organisms, especially in response to turbulence in the business environment, as in present times. We have tried to show that the corporation, in important ways, has in fact long since been quite like organisms, and even more. We have also pointed out the irony of another outcome of the present turbulence, the trend towards outmoding of the organizational career, because it has been a crucial orga-

nizing device to help the corporation, a social artifact, to be more like organisms.

We began with the observation that while the spontaneous emergence of order in nature, especially as and in organisms, has been of understandable appeal to organization and management thinkers, the attributes purposefulness and complexity-grappling capability are perhaps even more amazing, since they enable organisms to create order at will, as in the making of artifacts. We distinguished machines from other physical artifacts, for being equipped with varied kinds and levels of complexity-grappling capabilities, including, at times, the capacity to make yet other physical artifacts. Social artifacts too are equipped with the desired complexity-grappling capabilities; whereas creating machines is a comparatively recent feat, creating social artifacts is a much older practice, we noted.

With the innovation of the organizational career as a connecting dynamic frame (OCCDF), we proposed that social artifacts came to outlive their constituent individuals, quite like organisms which also outlive their constituent cells/molecules. This also enabled the social artifact to develop the capacity to be what Weber (1946: 228) has called, an «ever-moving mechanism», with the potential for purposefulness, which for the corporation came to be legally formalized, making it even more like the natural person. Finally, we also examined the longstanding notion that the typical corporation with the OCCDF is less flexible than organisms, proposing that the opposite is more true.

Nevertheless, the fact remains that the organizational career is now getting increasingly outmoded (Arthur and Rousseau, 1996; Herriot, 1996; Osterman, 1996). Of the many reasons which have been identified for this significant trend, a central one is extreme turbulence in the business environment. As Burack notes (1997: 36): «The reinvention of organizations, driven by turbulent economic and global competitive conditions, transformed career pathing for individuals and organizations alike». Similarly, *The New York Times*, while declaring the organizational career “dead”, attributes it to the extreme turbulence of “an unsettled time” (Walsh, 2001).

Yet there is also a growing literature (such as, Korten, 1995, 2000; Perrow, 1996; Kelly, 2001) arguing that corporations themselves are among the biggest causes of such extreme turbulence. So much so that today, for many corporations, the biggest threat in the environment is from yet other corporations. They are increasingly seen as more adversarial and at times even “cannibalizing” (Korten, 1995). This has reduced the discretion for the corporation in even the pursuit of its own survival. Thus in his study on the decline of the organizational career, Capelli (1999: 243) finds that forced by an «array of powerful pressures», mostly from the corporate world itself, the individual corporation’s «discretion was severely limited».

The oft-repeated exhortation for corporations to be yet more organism-like, as we have argued, has for long not been the answer. Perhaps it is time to turn the question around. Could this persistent prescription actually have been part of the problem? Have we, in fact, been too

successful in making corporations organism-like? The outmoding of the OCCDF would then be even more poignant. Clearly, much critical reflection is needed; because the situation already seems no less disconcerting than the futuristic one about the LEOs.

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