



INVITED RESEARCH PAPER

Aspects of identity, cohesion, citizenship and performance in recursive organisations

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Abstract *Develops the idea of complexity and its implications for our understanding of organisations and society. One such implication is the constitution of autonomous units within autonomous units. This notion is at the core of recursive organisations. Each of these autonomous units requires strengthening in its identity, cohesion and citizenship in order to perform well in its medium. However, in contemporary societies the rule is fragmented institutions rather than whole organisations. Further research is necessary in order to understand how to make more likely the emergence in society of recursive organisations.*

Introduction

This paper is a reflection of my work over the past two decades and also provides directions for future work. This work has focused on improving organisations of all kinds, in the private and public sector, large and small. It has covered, among other concerns, transformation processes, organisational diagnosis and design, the introduction of information technology in organisations and the transparency of decision processes. It all started in the early 1970s when, as a young graduate, I was working at the National Development Corporation of Chile. Those were difficult days for the country. The people's will was for change and to make it happen they had elected Salvador Allende to the presidency. Though most of us are aware of the sad end of his government, not many are aware of the extent to which it left seeds for personal transformation in those involved. I was not only part of the process but had the fortune to be close to some of the significant actors of those events, among others, Fernando Flores, one of Allende's ministers, and also Stafford Beer, who had been invited to support this process. This was for me the beginning of a most powerful journey.

When Stafford Beer arrived in Chile he had with him the manuscript of *Brain of the Firm*, his latest book (Beer, 1972; a second edition of this book, with a powerful account of the work in Chile, was published in 1981). This was the first of three books in which he developed the Viable System Model (cf. Beer, 1979; 1985). This is the model underpinning recursive organisations, the key concern of my work over the past two decades and of this paper. I was

captivated by this model straightaway and it has held my interest ever since. It is an extraordinary creation that, slowly but surely, is becoming a most powerful paradigm to support the development of fair and effective organisations.

The epistemology of individual and situational complexity

The key idea underpinning recursive organisations is complexity. Though it is a simple concept, it requires a good deal of reflection. I ground it in the idea of variety. Ashby defined variety as the “number of possible states of a situation” (Ashby, 1964). For instance, the number of possible states of a traffic light is eight, not three or four as people usually answer when asked the question. Three or four is the number of actual states depending on the country we are referring to. It has been abundantly explained elsewhere how variety proliferates even for relatively simple situations. For instance, the number of possible patterns of interaction in time among seven people is 2^{42} (two to the power of 42). This is about 4.5 million possible states (Beer, 1979, p. 38). In an epistemological sense, once confronted with such figures that are beyond our experiential reach, we know that in spite of its value, there is something more about complexity than the number of possible states. We need to find a different way of assessing the complexity of a situation.

Rather than talking about variety I relate individual complexity to the number of distinctions we make in particular action domains. This proposition puts firmly in an observer the assessment of complexity. Furthermore, our complexity is defined by our response capacity to deal with the distinctions we make in an action domain. In order to be effective performers we need to have requisite responses to perform with competence. For an observer (including us as observers of our own action) our complexity is the *distinctions and responses* we are able to make in our multiple action domains, and not in the reasoning or models underpinning the distinctions we make. These distinctions and responses define our detailed complexity or the complexity in our *operational domain*. On the other hand, the distinctions we make based on our models about the situation, which may entail abstractions of not only our relations in time with others but of these others with others further afield, without matching response capacity, define our complexity in the *informational domain*. If understanding these dynamic relations makes possible not only new distinctions but also practices, that is, if learning occurs, then they are supporting the development of our operational complexity. However, it is our complexity in the operational domain, and not in the informational domain, that defines performance. Complexity in the informational domain produces distinctions but if we do not ground them in action capacity, they may be wasted distinctions.

These ideas can be extended to situational complexity; even if each of the distinctions and related responses is very simple, but their number is large, we may assess the situation as complex. For instance, we may assess the performance of a computer as complex simply because it has differentiated

responses for a very large number of possible states, even though each of the states may be just a string of noughts and ones. On the other hand, we may assess the complexity of a situation as low, however complicated the processes leading to each of the distinctions might be, if the number of these distinctions and related responses is low. For instance, based on the above, the operational complexity of a chief executive, in the *organisation's domain of action*, may be very low, if he is dealing only with a few (however complicated) distinctions and related responses. His complexity in the informational domain may be high, but his action options are few. The operational complexity of Winston Churchill, in the action domain "Second World War" was indeed very low; he could only take action based on a few strategic options, while the vast complexity of the war was in the battlefields where people were fighting for their country and lives.

Our operational complexity refers to the moment-to-moment actions triggered by our tacit distinctions. It is in this latter complexity, based on action, that I am interested. As said before, the assessment of this complexity is observer dependent and therefore it is in someone's informational domain. A musical critic is assessing the operational complexity of a performer in the musical action domain; however, doing this assessment is in the critic's informational domain. Of course the performer can be his/her own critic. Since the assessment of complexity in the operational domain is always observer dependent it is fundamental to choose the right viewpoint from which to make it (Espejo, 1987).

About managers and organisations

As managers we manage the people (including ourselves!) performing the tasks we are accountable for. These are tasks with a complexity that goes beyond us. Indeed, our tasks challenge us with far more complexity than we can deal with directly. We depend on other people to make them happen.

In practice, thrown into action, we manage some of this complexity by ourselves, while the rest is either managed by others or simply left unattended. In general, we must *amplify* our action capacity in order to create, manage and produce our tasks. This amplification depends, among other factors, on our communicational abilities to achieve the commitment and support of others. It is through these others that in general we produce the required complexity to create meaningful and socially accepted tasks. But, as we create this complexity, it increasingly goes beyond our individual capacity to absorb it. As this happens, not only do we depend more and more on others, but whatever understanding we have of the task is the outcome of some form of complexity *attenuation*. This suggests that there is scope for us to create strategies to manage situational complexity more effectively (Figure 1). While ignorance is unavoidable and accepting it can be a blessing, success of this strategy depends on our ability and capacity to communicate with those who, wittingly or unwittingly, are absorbing for us aspects of our task complexity. Indeed, others have to make the distinctions and produce the responses of precisely the

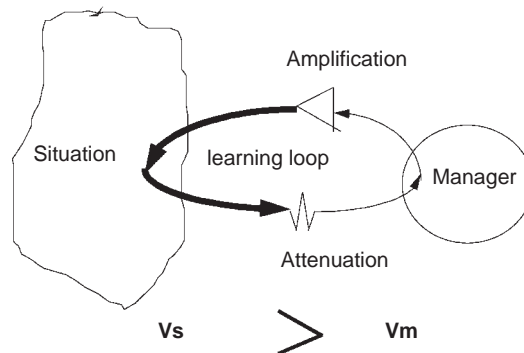


Figure 1.
Management and
complexity

relevant aspect that we are leaving unattended; otherwise our ignorance may become too costly. But, if after all this co-operation still there is relevant unattended complexity, either we absorb it ourselves or our task performance will be assessed as inadequate. To paraphrase Ashby “*only complexity absorbs complexity*”. In effect, managing complexity beyond our personal capabilities requires us to work through an organisation. It is through an organisation that we create meanings for our tasks and co-ordinate our actions with others. As managers the problem is to develop not only individual complexity but also the organisation’s complexity.

The epistemology of organisational complexity

Certainly, social organisations are very different from biological systems, but is there anything we can learn from the latter?

An *organisation*, rather than an institution, is a closed network of interrelated people, with an identity and a structure. Closure is given by people’s rules of engagement, for instance, by their functional specialisation and by their rules for allocating responsibilities and making decisions. The *identity* of an organisation, for an observer, is the set of invariant relationships realising the closed network. Identity is independent of the particular individuals embodying the relationships (Maturana and Varela, 1980; 1987). For example, the identity of a university is defined by, among others, the relationships underlying the interactions between students and academic staff, or between administrative staff and academics, or among researchers in the process of creating knowledge. In all these cases, there is no reference to particular individuals; they can be any as long as they satisfy these relationships.

The particular resources, human and others, constituting these relationships at a particular time and in a particular context produce the *structure* of the organisation. In the example above, the concrete teaching groups, committees, support staff, services, and so on, in existence at a particular time constitute the university’s structure. It should be apparent that the structure of an organisation is defined by the embodied relationships constituting the organisation, and not by the parts and lines of authority formally defined by, for example, an organisation chart.

Organisations are constituted by people's moment-to-moment interactions in their operational domains. It is through these interactions that relationships are formed, and in a given space and time, the organisational structures supporting people's actions are formed. This is the complexity we need to account for if we are going to *produce change*.

If social institutions achieve operational closure, that is, if they become organisations, then we say they are *autonomous systems*. That is, they are constituted by participants who define a closed network of recurrent relations. However, by no means all institutions are organisations and indeed observing operational closure poses in itself a significant research problem. But if we accept it, its implication is that organisations are structure-determined. This means that change and response capacity in organisations is the outcome of the multiple adjustments taking place in the operational domain of their structures, as people in interaction adjust to external perturbations, and not of responses to external controls and information as if they were trivial machines (von Foerster, 1984).

Change is determined by the internal coherence of the organisation and not directly by its inputs. Organisations receive *perturbations* that are absorbed in different ways by different structures. To a large degree it is not the content of a message or decision that determines the response but the structure that absorbs the message or decision. People in organisations are constantly receiving information about aspects for which they find no structure to be informed. For example, reports about a forthcoming patent of a competitor, highly damaging to the company's future, may trigger no actions simply because there are no resources focused on this aspect. However valuable these messages might have been for the organisation's viability, they were not heard. These messages simply are dissipated in the organisation. The same message, if affecting a different structure, could produce a very different response.

This makes it apparent that the concept of information is not enough to understand change; *change* may be triggered by information but not determined by it. In other words, organisations do not pick up information from the environment nor do they *respond* to external *information*, as we often hear. That view may be useful in the informational domain of an observer; however, in the operational domain of the organisation, what happens is nothing of the kind. It is the structure of the organisation that specifies what patterns of the environment are accepted as perturbations and what changes will be triggered by them.

In this framework *communication is coordination of actions*. It refers to the structural coupling of the participants of an organisation – that is, to their structural adjustments – in a history of recurrent interactions. Therefore, communication entails much more than information transmission.

Seeing systems: the unfolding of complexity

Our discussion of complexity made apparent that devolving responsibility in collaborative tasks is unavoidable. This is a necessity if we are to manage

complex tasks. The problem is to know how to do it effectively. This suggests that an important strategy to cope with complexity is creating the context for autonomous units to thrive within autonomous units. This kind of embedding has been long recognised by Beer (1979), and if seen from the perspective of a total organisation, is what I have referred to as its *unfolding of complexity*. This is shown in Figure 2 (Espejo, 1989).

Of course we can also think the other way round; a small autonomous unit as it becomes more functionally differentiated, to maintain its cohesion, may require the emergence of a larger autonomous unit subsuming the differentiated resources, and this process may continue as differentiation increases (Kelly, 1994). This is the strategy for nature's evolution.

Autonomous units within autonomous units is above all the outcome of self-regulating and self-organising processes. In *social organisations* these units emerge as collectives achieve closure in their interpersonal interactions. This is an outcome of people's *throwness*, that is, of their moment-to-moment interactions in their operational domains (Winograd and Flores, 1986).

From the viewpoint of management, the value of understanding how to catalyse *self-organisation* in desirable directions is apparent. This is a critical strategy to enhance the performance of an organisation in its environment. Hence, the relevance of understanding that the emergence of a desirable organisation requires the interactions of autonomous units, or *primary activities*, producing the organisation's ascribed purposes. These interactions are enabled by other resources, the organisation's *regulatory functions*, whose purpose is developing and maintaining the cohesion of primary activities. This

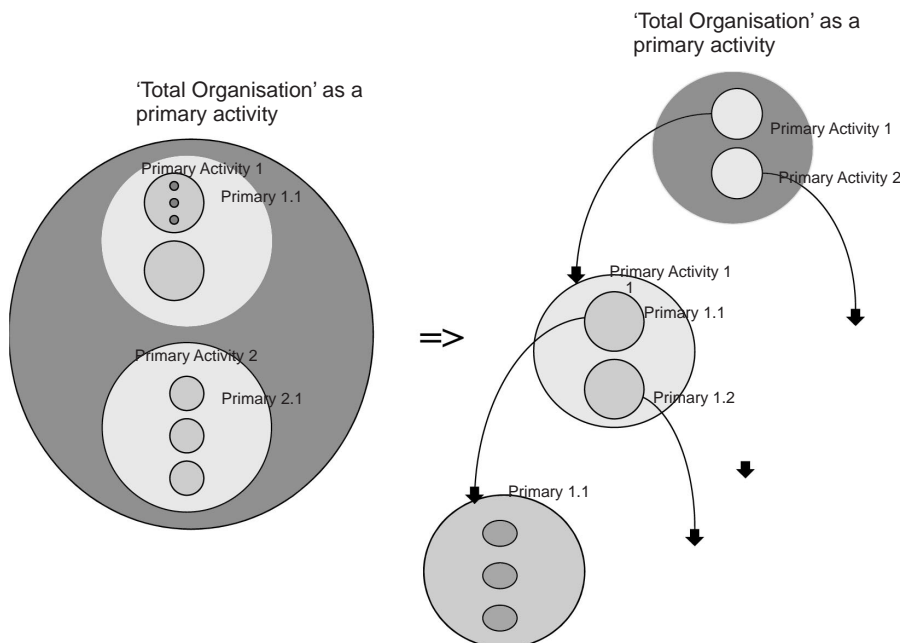


Figure 2.
Unfolding of complexity

applies to each autonomous unit – primary activity – within the organisation, and to each autonomous unit within each autonomous unit, until the self-created complexity of the organisation's task is fully absorbed. Each autonomous unit depends on its own regulatory functions to maintain cohesion. Autonomy is devolved throughout the organisation to smaller units so that each unit takes responsibility for co-evolving with its relevant outside world. Each has to pay attention to its short, medium and long term. This is a requirement to enhance the organisation's performance and to manage effectively the complexity of environmental issues. This autonomy is limited only by the need for each unit to respect the cohesion of the larger unit within which it is embedded. And this cohesion requires regulatory communications between the autonomous parts in the context of an autonomous *whole* (Figure 2). The structural requirements for these communications are given by the Viable System Model (Beer, 1979). I call these organisations, based on *functional* autonomous units within *functional* autonomous units, within *functional* autonomous units, and so forth, *recursive organisations* (Espejo, 1996)[1].

For us, as observers, the challenge is seeing these recursive organisations. The challenge is “*seeing systems*”, beyond the widely accepted view of systems as epistemological devices, that is, ideas or mental constructs with no referent in the world (Checkland and Scholes, 1990). In this work, *a system is an observer's construct of interrelated resources constituting a whole in the world*. In order for us to see an autonomous system, we must “see” interrelated resources with closure, capable of *creating, regulating* and *implementing* their own tasks. The most common observation, however, is that both in the public and in the private sector, in large and small enterprises, we create institutions which lack in wholeness. For instance, it is not uncommon to see in the public sector institutions producing policies whose regulation is the responsibility of other institutions and whose implementation is done by yet other institutions. This diagnosis would not be such a problem if people in these institutions saw the need for effective communications, that is, if they were able to see and produce the tacit system. But unfortunately, often this is not the case.

It is clear that in today's societies the rule is fragmentation rather than wholeness, hierarchies rather than respect for autonomy. We are far from recursive organisations, however; we ought to be aware of the implications of this fact. We cannot say we want *autonomous and cohesive* organisations and not aim for recursive organisations. We cannot say we want *participative* organisations and not strive for recursive organisations. We cannot say we want *transparent performance* and not endeavour to achieve recursive organisations. I want to give evidence for these statements.

Social systems and recursive organisations

Recursive organisations – our reference for social effectiveness – have clear *identities*, are *cohesive*, achieve effective *citizenship* in their subsuming organisations and are well adjusted to their medium, that is, *perform well*.

However, in our daily experience all kinds of fragmentation of resources are limiting the construction of recursive organisations. As said before, this is the case when the resources needed for creating, regulating and implementing a task are not integrated. Fragmentation is common in the processes creating purposes and policies and also in the processes for regulating and implementing the implied tasks. We, as participants and observers, experience constantly the difficulties and pain of working and participating in organisations with unclear identities, which suffer different degrees of schizophrenia, with difficulties to achieve and maintain their cohesion, experiencing the alienation of being poor citizens of their subsuming communities and organisations and suffering the consequences of not performing well in their medium. In what follows I will explore these aspects.

Aspects of identity

There are a number of implications emerging from our view of systems and from the definition of recursive organisations. First of all, since it is common for us to operate in organisations with unclear purposes and hazy meanings, it is often difficult to distinguish which activities should be primary and which should be regulatory. It is not unusual to see in organisations, regulatory resources striving for their own autonomy at the expense of servicing the global interests. This points to the *need to work out the organisation's identity*. But, and this is perhaps a key aspect of recursive organisations, it is apparent that each primary activity should have its own purposes and identity. If this is not the case, *we are seeing a hierarchical and not a recursive organisation*. How can you be autonomous if you do not create your own purposes or are not responsible for your own identity?

Therefore, a recursive organisation emerges from the interactions of primary activities, at several structural levels, each aligning their *self-defined purposes* with those of the more global organisation. In a recursive organisation there is no unilateral imposition of corporate purposes; it is inherently pluralistic.

In structural terms, the problem of identity becomes particularly significant when for a particular policy issue we can only hypothesise an organisation rather than see a “whole” operating organisation. Even if we see resources, and possibly some institutions, focused on this policy, the chances are that they will be weakly connected and out of balance. We may find significant unbalances between those resources focused on the “*outside and then*” and those focused on the “*inside and now*”. In these circumstances, policy makers are likely to be overloaded by the independent requirements of each side, making it very difficult for them to nurture an organisation's identity, let alone to ground their views about it. Moreover, with poor communications people will feel detached from each other, making it also unlikely that policy makers will succeed in *configuring and re-configuring* effective organisational purposes and identities. The lack of a shared communication space is hindering organisational reflection.

Often organisations have to trade-off between a good grasp of their environment and cohesive primary activities. A recipe to make their products irrelevant is reducing their external interactions. But, spending too much in external interactions at the expense of internal cohesion is a recipe for unaligned purposes and ungrounded ideas. In the former case the organisation may increasingly lose touch with the environment as its products become irrelevant, in the latter case the embedded primary activities may find it increasingly difficult to align their self-produced purposes with the organisation's global direction. This is the trade-off between effectiveness and efficiency. Any organisation needs to be aware of this trade-off in order to steer its course. If the assessment of policy makers is that so far too much emphasis has been put in one direction at the expense of the other, they need to reallocate resources in order to maintain the organisation's relevance in the longer run. In fact this is at the core of being self-aware of our autonomy and our ability to self-construct our tasks. The more balanced are communications between external and internal concerns the more likely it is that we will produce well defined tasks sensitive to external changes and grounded in the capabilities of all participants. Stretching but realistic demands, produced by rich conversational processes, help to develop identity, thus providing a framework for cohesion. The *mechanism for adaptation of the VSM* underpins the above discussion (Espejo, 1989).

Aspects of cohesion

Cohesion is a requirement for primary activities to produce an organisation. However, the more resources are spent in achieving internal cohesion, whether because of internal conflicts, poor understanding of control processes, lack of goal clarity, undefined purposes, or simply because people feel the need for more co-ordination, the fewer resources will be focused on producing the organisation's tasks. This is not a simple trade-off, but somehow there is one; there is a point where the costs of achieving cohesion exceed its benefits. Synergy becomes negative. We need to take care of internal communications.

Hierarchical relationships in the regulation of primary activities produce fragmentation and *control dilemmas* (Espejo, 1989). These dilemmas are exacerbated by an increasing environmental complexity in society in general. Complex organisational tasks require flexible embedded primary activities. Indeed, the organisation requires more local problem solving. But, as more decisions are taken locally, global managers feel that they are losing control of the situation and their intuitive response is to intrude more in local issues, to ask for more information and to issue more regulations. Precisely when the subsumed primary activities need more flexibility the managerial response is to reduce it. When this is the case people in the primary activities may spend too much time responding to internal requirements at the expense of doing their tasks. Worse than that, people in the primary activities may lose any feeling of task ownership, thus increasing the problems of cohesion.

I suggest that at the root of this situation is that managers think they can manage people and organisations through information alone. “If we feel we are losing touch, let us ask for more information”. This is a recipe for fragmentation.

This is particularly clear in large functional structures, where the integration of creating, regulating and implementing the organisation’s tasks happens at a very centralised level. In such cases we find that aspects of a task are left in one unit while other aspects are left with other units, making their integration too slow and costly. Realising the need to overcome this fragmentation has led organisations to all kinds of business process re-engineering. For instance, at the National Westminster Bank (Espejo and Gill, 1996), as with most banks, had to adjust its structures as a result of new information technology. It decided to introduce a new *service delivery strategy* in the mid-1990s, which in effect implied resource centralisation and functional decentralisation. The new structure implied, among other aspects, taking away from high street branches lending and service resources into regional centres. Figure 3 shows the bank’s unfolding of complexity. This model was developed based on interviews, observations and other relevant information. The unfolding shows that “areas” and “service” and “lending” centres are the primary activities of a region. Within the “areas” we find the high street branches.

This work was focused on the *lending process* for small businesses in one of the 18 regions of the bank. For this primary process, consistent with the above comments, aspects of the task were fragmented between the branches and the service and lending centres. Moreover, the rewards system in use created competition rather than co-operation among them. The only structural instance

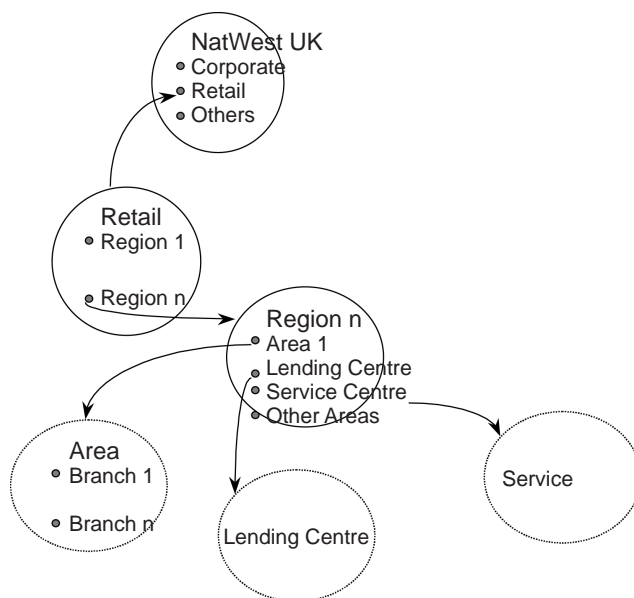


Figure 3.
NatWest UK: delivery strategy

with an overview of lending was the region, but it had no capacity to manage this overview because of its remoteness and limited resources. This was to the detriment of lending performance. In order to overcome this fragmentation we advised them to create “virtual areas”, integrating at this level branches, service and lending resources (Figure 4). This was achieved with the support of information technology, a good deal of coaching and the design of an integrated task. The outcome was overcoming the fragmentation of implementation and producing at the same time a large improvement in performance (see Espejo and Gill, 1996).

Aspects of citizenship

Achieving and maintaining membership within a larger organisation, that is, being one of its citizens, requires effort and attention. In this part I discuss organisational citizenship from the perspective of the relation of primary activities with their subsuming organisations.

Citizenship implies taking seriously the fact of belonging to an organisation (or indeed to several). Accepting belonging to an organisation, if you are truly autonomous, implies accepting an alignment of purposes.

Citizenship does not imply submission to the interests of the larger organisation. On the contrary, it implies mutual respect between those representing the interests of one and the other. The subsumed primary activity, if part of a recursive organisation, is an autonomous self-constructed organisation with its own purposes and interests. It recognises the value of being part of the larger organisation but it is its prerogative to defect if it so wishes. Defecting may imply, among other possibilities, dissolution of the primary activity or simply developing citizenship elsewhere[2].

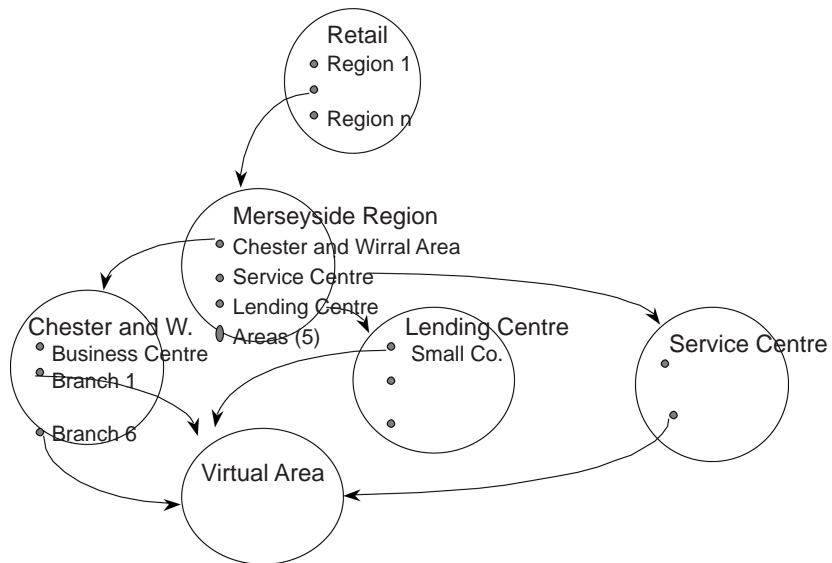


Figure 4.
Option 3: mixed
perspective

Among other factors, inflexible technologies, poor organisation of work and overly strong functional structures, have hindered the constitution of small basic primary activities for anyone to develop a clear sense of belonging. This has been, and still is, a problem with the unfolding of complexity in organisations, which has affected citizenship. We are likely to relate better to small units with a sense of purpose than to shapeless large organisations. This issue has been recognised in organisations in recent times and autonomous teams have become far more common than was the case in the past. But, in spite of this progress, in organisations with weak identities and poor cohesion people still find it difficult to recognise the nature of their relations. Lack of clarity in this respect may lead to dysfunctional organisational relations, where people fail to see the need to belong to unrecognised subsuming organisations or to respect the autonomy of the unseen embedded units.

The nature of negotiations in an organisation may reveal the way one primary activity sees the other. If programmes are imposed from above, with little or no negotiation, then we may infer a lack of understanding of the autonomous nature of the subsumed primary activities. The cost of this behaviour is waste of human resources since the “would be” primary activities are seen as a mere extension of the larger primary activity, thus restricting their creative contribution. This is an example where the task is constructed for others rather than self-constructed.

Effective citizenship implies effective communications between those representing the subsumed and subsuming organisation. Information is not enough; they have to develop communications between them. It is not good enough to allocate resources at a distance nor just be informed about progress on agreed programmes. People at the two levels not only may operate in different places and even at different times but more fundamentally, if true recursion is happening, in different organisations; the subsuming and subsumed primary activities. This fact makes it apparent that what is going on in the subsumed primary activity will remain beyond the experience of the subsuming people unless they develop communications beyond information. This is a requirement to avoid communication breakdowns. Of course the challenge is producing communications for effective citizenship, avoiding, on the one hand, uncaring detachment and, on the other, unnecessary intrusion. If the subsuming people do not develop a healthy appreciation of what is going on within the subsumed primary activities, the kind of problems they are experiencing, the opportunities they are seeing, their capabilities and potentials, then the chances of aligning their purposes and interests are drastically reduced; distant information is not rich enough. In these situations people in primary activities may be wondering whether there is any interest in what they do; are they trusted at all as valuable members of the organisation? But their creativity and initiative may be stifled if those from the subsuming organisation are constantly meddling in their affairs; not surprisingly people may construe this behaviour as a lack of trust in their skills and possible contribution. Producing a good balance between distant information and local

communications is part of a learning process aimed at avoiding organisational restricted learning (Espejo *et al.*, 1996) and indeed a requisite for developing trust within the organisation.

About trust

Trust often means for us to accept the actions of others without the need to scrutinise them. Trust is seen as a precondition to entering social relations. If we did not trust others we would run the risk of paralysis. Trust is a key factor to make our lives more manageable, but as I will argue, it should not be used just to the effect of making others' behaviour predictable (Hummels, 1997). Indeed, trust should not be seen only as a means to reduce environmental complexity, though we often use it for that effect, making it a *contextual trust*. As I will argue, in recursive organisations trust can be one of the most powerful amplifiers of managers' complexity, that is, it can be a means of creating beneficial uncertainty and unpredictability in our lives. It allows us to create true relations of collaboration. This is a form of *responsible trust*.

Naturally, we would like to make predictable all those action domains that are not essential to our main individual and organisational purposes. And, for that, some form of contextual trust plays an important role. For instance, we would not cross a road if we did not anticipate that drivers will not run us over. We trust drivers, even if we do not know them at all. Also we put our money in a bank because we anticipate that it will be available when we need it. We trust the institution. These are two types of trust, the first based on social cohesion and the second on the social role of particular institutions, where predictability is what makes the relationships trustful. On the other hand, in those action domains essential to our purposes, in which we participate with others, trust should not mean to make the others' actions predictable. That would force them into our view of the world, denying them as legitimate others in the construction of a common task. In this case trust is our disposition to construct with others. We expect and accept their creative and sometimes surprising contributions. Trust in this case is built as an outcome of recurrent processes of interaction in which we assess the competence and sincerity of the others. Trust emerges from stable relations and not from the predictability of behaviours. This kind of responsible trust is the one we need to achieve in order to build up common tasks with the autonomous participation of all contributors. This requires sharing realities and in general keeping a degree of mutual understanding. In this case, accepting what the others do without making an effort of sharing realities and understanding each other is a blind acceptance of their actions and therefore is a *naïve trust*.

When the above distinctions are not understood, and we trust others in situations of common construction, on the assumption that they will be predictable, we get into a dilemma. Either we are let down and lose trust because people express their creative individuality or we force on them our views, in which case we achieve submission rather than trust. This dilemma suggests the need to go beyond naïve trust into responsible trust.

This distinction has important implications as far as recursive organisations are concerned. To realise recursive organisations we need to learn to build up responsible trust.

Trust in a recursive organisation

A characteristic of recursive organisations is the collaborative nature of task construction. The overall organisational task is the integration of the subsumed primary activities' tasks and these tasks in turn are the outcome of their subsumed primary activities' tasks (cf. Figure 1). It is apparent that the effectiveness of these integrations will depend on processes of trust building. If these are based on defining for primary activities what they have to do, in a hierarchical manner, their complexity is being attenuated and the overall outcome is a task that does not get the best out of people in the primary activities. In other words, performance is hindered. On the other hand, if the process is one of responsible trust building, where the primary activities have the opportunity to create their own tasks and to integrate them in the context of the overall task, they will effectively amplify it, by adding their creativity and by aligning their own interests with those of the total organisation. Effective citizenship is therefore a truly enabling type of relationship which increases greatly the cohesion and performance of the organisation.

Processes of trust building are processes of individual and organisational learning. Each one has to learn to see the other participants as autonomous individuals. This is a learning that requires deep changes in interpersonal communications; if those in power positions want to see their viewpoints implemented and those inside the organisation are conditioned to expect decisions made for them, then responsible trust is unlikely. As for organisations, they need to learn to see their subsumed organisations as wholes with their own capacity to create, regulate and implement their tasks. This is particularly difficult when structural fragmentation is compounded by lack of interest in the subsumed primary activities to develop their autonomy.

Building up responsible trust in an organisation is a fundamental strategy to achieve a creative amplification of corporate policies, however, its success will require reconstructing our concept of control in organisations. Building up trust between people operating at successive structural levels is a strategy to rely more on self-control and to reduce the need for external controls. This is a strategy which implies a fundamental change in the so called vertical relationships. It implies passing from hierarchical relations based on extrinsic control, information requirements and control dilemmas, to relations based on intrinsic control, communications and mutual respect. This new form of relationship implies a fundamental cultural change. The cybernetic explanation of how to achieve this is in the Viable System Model itself (Espejo, 1989).

Aspects of performance

Organisational performance is not independent of the ways in which identity, citizenship and cohesion are handled by all its primary activities. It relates to

the performance of each primary activity, including of course, the performance of each person. Each primary activity, starting from an individual or a team, has its own value chain, with its own suppliers and customers. All of them are producing products or services of one kind or another for their customers. But also these products and services should be aligned with those of the subsuming primary activities they belong to. These performance requirements make it apparent that for primary activities it is not enough to be efficient in producing well defined products, they have to be effective in adapting to changing internal and external conditions; hence the significance of the relations of citizenship and cohesion. We are at the core of the *intrapreneurial* requirements emerging from participation in recursive organisations. Primary activities, however small they are, are concerned not only with operational matters but also with strategic and normative matters; this is a hallmark of their autonomy (see Espejo *et al.*, 1996).

This last point makes apparent that performance is much more than being cost-effective. As we become the citizens of a global village, organisations and society must develop far more sophisticated forms of assessing performance than the traditional management accounting systems in use. Not only are our accounting practices restricting the development of recursive organisations, by forcing a restricted set of distinctions into the whole organisation, thus making less likely the self-construction of performance criteria (Espejo and Reyes, 1995), but they are blurring our appreciation of the effects of industrial activities on the environment (Espejo and Stewart, 1998). For instance, how do we guarantee that the nuclear industry, today highly profitable, will not create global and local catastrophes in the longer run? Over the past two years I have been involved in discussions about the transparency of decision making in the management of nuclear waste in Sweden. What I have learned is that unless society develops more effective mechanisms to challenge the activities of such industries and finds ways of *stretching them*, we run the risk of unchecked industrial activities, that may produce profits in the short and medium term, may even increase our standards of living, but may make our world much more fragile.

Beyond cost-efficiency, our organisational activities need legitimacy and authenticity. Performance cannot be only a technical concern, it has to include *legitimacy and authenticity* as well (Habermas, 1996). And, to make these criteria operational we depend on recursive organisations. Technical efficiency, legitimacy and authenticity apply to all autonomous organisations, that is, to all primary activities.

Legitimacy is an assessment made about the grounding of an organisation's actions in social norms; are these actions just and fair? In other words, if these actions are aligned with the norms shared by stakeholders they are likely to assess them as legitimate. On the other hand, authenticity is an assessment made about the coherence of an organisation's declarations with its observed identity and actions.

Legitimacy is granted to an organisation by its stakeholders. Authenticity is recognised in the organisation's actions. These assessments emerge from appreciating the relationships of an organisation's stakeholders, both in its environment and within itself. It is the consistency of these relationships with stakeholders expectations that produces assessments of legitimacy and authenticity.

An organisation's identity is produced by the relationships between its stakeholders. People develop expectations about these relationships. These expectations are not fixed and indeed change over time. When they apply to the grounded meanings of our moment-to-moment interactions we are referring to operational (normative) expectations, whereas when they apply to our models of the world, we are referring to informational expectations. Breaks in operational expectations produce assessments of legitimacy and authenticity. Of course breaks in informational expectations may incrementally change our world models and with that our appreciation of relationships.

It is an organisation's actions that need to be seen and accepted as legitimate by stakeholders. By creating pressures and questioning their institutions people are often strengthening them. Unfortunately, often this task is left to unrepresentative pressure groups and not to responsible guardians of societal interests.

Legitimacy of an organisation's actions is grounded in its autonomy and, additionally, in modern societies, in the generative regulatory power of their democratic institutions. The accountability of organisations to their stakeholders is often regulated by legislation and norms. Of course these regulations need to co-evolve as people's values and expectations change. If they do not, people perceive this mismatch as a gap reducing the organisation's legitimacy.

However, this problem of legitimacy may also be rooted in the way the organisation makes apparent its autonomy. The studies of the Swedish nuclear system (SNS) and in particular of its nuclear waste management system (NWMS) have made it apparent that the operator, responsible for waste management (one of its primary activities) has a split identity. On the one hand, it is an organisation dominated by the commercial ethic of a private enterprise, and on the other, an organisation dominated by the ethic of a public service. This split threatens the legitimacy and authenticity of the operator's decisions and therefore, from the public's perspective, its performance.

This is a particularly significant issue for transparency in decision making. If particular policies and decisions are inconsistent with the way people experience the organisation, people's assessment of the organisation may be that it is not authentic. The effect of this assessment is far reaching. It makes difficult, if not impossible, the evolution of necessary trust between the organisation and its stakeholders. Trust is a precondition for communicative action and therefore for people accepting expert views, without requesting technical transparency. Authenticity is a fundamental attenuator of people's demands on the organisation. When they assess an organisation as authentic,

they are more likely to trust their views and decisions, thus reducing their demands for technical evidence. They trust that the organisation is dealing with their concerns to the best of its abilities. This is very different from a situation dominated by suspicion and mistrust.

Authenticity, in the way explained above, depends on people's ongoing assessments of the coherence of the organisation's moment-to-moment actions with its policies and decisions. Often the gap between the two emerges not from intentional deception but from the lack of organisational capacity for "making things happen". This view implies the need for effective organisations with the "requisite capacity" to relate words and intentions to deeds. The quality of relationships often depends on the complexity that the participants can put in them. Lack of complexity to develop a relationship may produce a gap between expectations and actions, that is, a perception of lack of authenticity. This proposition has structural implications. For instance, the structural recursion of an organisation like a nuclear waste management operator, if it wants to give proper acknowledgement to the long-term effects of this management, may need to map the communities affected by its activities, however large the costs of this mapping might be. Structural recursion is a requirement for transparency.

Future research

Before finishing I want to look ahead and put forward proposals for future research.

First, it is apparent that we need better skills for seeing systems and relationships and, in general, for becoming better observers of organisations and of people working in organisations. This suggests further work in a programme on applied epistemology.

Second, all my research has had a common methodological framework. In all cases I have been concerned with issues that I have studied by embedding them in the structures producing the issues themselves. It is the interplay between people's actions and the autonomous structures providing a context for those actions that I have been interested in. I believe we are in a paradigm shift, from the goal seeking, black box, functionalist approach of early cybernetics, to the "meaning creation" of soft system methodologies, to *methodologies based on self-construction and autonomy*. In this work, the contributions of Beer, de Zeeuw, Giddens (1984), Luhmann (1985), Maturana and Varela, to name a few, are fundamental. It is critical to clarify the way we see purpose in social systems. If the purpose is given to a system from the outside we talk about a purposive system. If the purpose emerges from within we are talking about a purposeful system. However, our discussions of complexity unfolding and citizenship have made apparent that most purposes in our social systems are defined from the outside, denying the autonomy of the participants. This is also reinforced by the accounting systems in use. It is clear that we need to develop

more fully the forms for participation and self-construction. Most of our problem solving does not involve the right participants in the creation of meanings. This is a form of tyranny that we need to overcome.

Third, in order to make more visible the complexity of social processes we need to develop more effective *social accounting systems*, based on processes of self-construction. This research will need to develop further the issues of technical efficiency, legitimacy and authenticity. Accounting systems are processes of reality construction.

Fourth, and finally, we need to move from studying the *is* and *should be*, that is, from the diagnosis and design of organisations, to the *ought to be*, that is the ethical and normative issues (Ulrich, 1983). These critical aspects of systems thinking are essential to most of the contemporary issues of management.

Notes

1. In our day-to-day social institutions, autonomy is more likely to emerge from the strength of people's interactions than from ascribed, desirable purposes. When organisations constitute non-aligned, with their ascribed purposes, autonomous units these become dysfunctional to the espoused purposes.
2. It is clear that not everyone can do this; however, realising this type of relationship may be seen as an ethical imperative for our societies. In any case, we develop citizenship in several organisations at the same time.

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