THE COGNITIVE LIMITS ON ORGANISATIONAL REFRAMING: A SYSTEMS PERSPECTIVE BASED ON THE THEORY OF AUTOPOIESIS

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ABSTRACT

Organisational reframing is founded on the belief that many managers adopt a narrow perspective in defining and dealing with organisational issues. This type of manager is deemed to be less effective than those who are capable of handling and co-ordinating multiple logics, and therefore have more choices available. While reframing has been one of the more significant recent developments in management studies, the idea has been criticised most notably because the link between reframing and action is nowhere near as straightforward as its advocates would have us believe. To this end the paper focuses on one such constraint: that which involves human cognition. Using a broad perspective on cognition arising out of Humberto Maturana's contributions to the biology of cognition paradigm, to its progeny: autopoiesis, and to a particular way of thinking about human knowledge based upon his ontology of the observer, the paper comments on and critically assesses the cognitive assumptions that underpin the idea of reframing.

The overall argument is that a broad systemic perspective on human cognition is necessary to fully comprehend the complex issues that are involved in both individual and collaborative organisational reframing. We conclude that bringing about multi-frame thinking and/or reframing has ramifications way beyond the specific individuals who might be involved, and can be extremely difficult. At the same time we submit that having a better understanding of these difficulties paves the way for those involved, including facilitators, to take steps to maximise the chances that the expected outcome of linking reframing with action will eventuate.

1. INTRODUCTION

Organisational reframing is founded on the belief that most managers adopt a narrow perspective in defining and dealing with organisational issues. This type of manager is deemed to be less effective than those who are capable of handling and co-ordinating multiple logics, and therefore have more choices available.

Of those who advocate reframing in organisational analysis (Bergquist, 1992; Perrow, 1986; Quinn, 1988; Scott, 1981; Torbert, 1989), the best known are Morgan (1986, 1989, 1993) through his 'Multi-Metaphor, 'C-Plan', and 'Imaginization' approaches, and Morgan (1986) and Bolman and Deal (1997) through their detailed elaborations of a range of different frames. Elsewhere, in management and the systems sciences, Checkland (1981), Eden (1989) and Flood and Jackson (1991) have the same basic idea as integral components of various problem-structuring methodologies which aim to assist stakeholders in analysing existing frames and in pursuing the implications of a wide range of alternative possible explanations about what is going on in a problem situation and what might be done about it. The objective is to encourage stakeholders to suspend judgements about problem situations until – through a collaborative process of debate and learning – a clearer picture emerges.

While reframing has been one of the more significant recent developments in management studies, the idea has been criticised on the grounds that the link between reframing and action is nowhere near as straightforward as its advocates would have us believe. Thus, in a useful summary of the literature, Palmer and Dunford (1995) claim that there are four main sets of constraints that can muddle the link between reframing and action: cognitive limits, frame dominance, conceptions of action, and knowledge and power.

This paper aims to explore further the first of these constraints. To date discussions about the cognitive limits to reframing have mainly looked at the issue from a cognitive complexity angle (see Thomas, Clark and Gioia, 1993; Steugert and Nogami, 1989; and Wally and Baum 1994), the assumption being that having the ability to handle the perceived world using a large rather than a small number of bipolar dimensions is necessary for reframing. Now while this is an undoubtedly important factor we submit that there are a myriad other ways in which cognition impinges on reframing the recognition of which demands a more holistic theoretical perspective.

Such a perspective is provided by Humberto Maturana, the Chilean biologist whose contribution to our understanding of human behaviour is only just beginning to have influence beyond its origins in the biology of cognition paradigm (see Capra, 1996; Mingers 1990, 91, 95). In what follows then, we employ Maturana's contributions to this paradigm, to its progeny: *autopoiesis*, and to a particular way of thinking about human cognition based upon his so-called *ontology of the observer*, to comment on and critically assess the cognitive assumptions that underpin the idea of reframing. Unlike most theoretical propositions about human cognition which are grounded in the analysis of data collected through clinical, laboratory, field, or survey-based research, Maturana's are grounded in a detailed consideration of what human beings do in the cognitive domain in daily life. Since reframing is something that managers are being encouraged to do in their daily lives, the perspective seems particularly appropriate.

The paper is written on the assumption that most readers of this book of proceedings are familiar with reframing but not with Maturana. It begins therefore with a rough working sketch of his ideas. Then in the main body of the paper there is an analysis of three key areas in which we believe that Maturana's work can contribute to our further understanding of the difficulties involved in reframing. These are the structure and content of frames, the origins of frames, and the dynamic or process through which they emerge and alter over time.

2. BRIEF OUTLINE OF MATURANA'S CONTRIBUTION TO THE BIOLOGY OF COGNITION, AUTOPOIESIS, AND THE ONTOLOGY OF THE OBSERVER

Since Descartes first proposed some 350 years ago that there is a fundamental dualism between mind and body, neural information processing has been taken to be the core cognitive activity. Today however, there is a cadre of scholars from biology, philosophy, cognitive science, social theory and the new so-called science of consciousness who reject the notion that 'thinking' is an isolated mental activity separated from both the rest of body and from the social context in which it takes place.

As one such scholar, Maturana (1978, 1983, 1987, 1988) claims that there are two phenomenal domains involved in 'observing'. The first: *biology and internal dynamics of the nervous system*, is what makes observing possible; the second: *social relations and interactions*, is where observing takes places. Observing refers to human cognitive processes such as making distinctions, describing phenomena, uttering cognitive statements and explaining experiences.

The origins of Maturana's views about the domain of biology/internal dynamics go back to experimental work done in the 1960's that led him and Francisco Varela to seriously question the prevailing view that the nervous system is open to environmental inputs and involves information processing. Instead they claim that it operates, *" . . . as a <u>closed</u> network of interactions in which every change in the interactive relations between certain components always results in a change of the interactive relations of the same or other components"* (1987, p. 22 emphasis added). From this basic insight arises the idea that all composite systems, including human beings, are *structure determined*, i.e.*" . . . everything that happens in them happens as a structural change determined . . . either in the course of their own internal dynamics or triggered but not specified by the circumstances of their interactions."* (Maturana, 1990, p. 13).

On this view perception, does not – as conventional wisdom and the Cartesian account would have it - involve generating representations of an external reality. Instead it is the outcome of dynamic relations within a closed circular nervous system. External stimuli do not determine our experience of them. Rather our experience corresponds to a specific pattern of states of activity in the nervous system that its structure determines. Although we can correlate our naming of objects with states of neuronal activity we cannot correlate it with the stimulus that triggered the experience in the first place. According to Maturana and Varela (1987, p. 22) this logic applies to all perceptual modalities.

Extending these ideas of circularity and closure of the nervous system, Maturana proposes that all living systems are *"networks of molecular production such that the molecules produced, through their interaction, generate the network that produced them and specify its extension"*. The term *autopoiesis* (self-production) is employed to describe this dynamic, or - as Maturana puts it – to describe this peculiar 'manner of relating' of the molecules. The invariance of this dynamic across all living systems allows the term autopoiesis to be used to capture the basic form, or the *'organisation'* of living systems. The term '*structure'* describes how this organisation might be realised in particular cases. Whereas organisation is invariant, structure is subject to change, and it is the distinction between these concepts that allows us to see how stability and change – including learning - can exist side by side.

Maturana uses another important term - *structural coupling* – when it is possible to observe congruence or 'fit' between the living system and medium. When there are recurrent interactions between say an organism and what an observer would regard as its environment (or between one organism and another), structurally determined changes occur in both; i.e. the two structures change *congruently* according to their respective structure determinism. Through this process the structure of the organism at any point in time becomes a record of previous interactions. While these changes are taking place there is a conservation of autopoiesis and adaptation.

For Maturana structural coupling generated by the demands of autopoiesis plays the role that the Cartesian account of cognition attributes to having a representation of the world. Under this account cognition involves manipulating representations in the brain to work out ways of responding to environmental circumstances. The problem with this is that it precludes organisms without advanced nervous systems, and/or organisms that cannot 'language' representations, from engaging in cognitive acts. It would also seem to preclude describing human behaviour that just shows up as 'pure unmindful doing' as involving cognition.

For Maturana 'knowing' occurs when an organism's behaviour in its domain of existence seems adequate to an observer, i.e. when it is adapted to its medium. This means that when an amoeba, responding - through its structure determinism - to changes in the chemical constitution of the liquid that surrounds it, encircles a particle of food, we can speak of cognition. When a human being unmindfully types on a keyboard at 120 words a minute, or performs a complex piece on a musical instrument, it means that we can speak of cognition. In these examples, cognition is not a mentalistic phenomenon; it is *effective action in a defined domain of existence*. And, as these examples show, effective action involves the whole body, so cognition is not limited to what might happen through the mechanisms of language and thought. A typist has knowledge in his arms, hands and fingers, a flautist has knowledge in her fingers and also in her lips, tongue, throat and diaphragm. On this view the abstract thinking that goes on in human beings is but a special case of what is a very much broader phenomenon.

Maturana's explanation of the development of observing in human beings, extends the notion of a living system structurally coupled to a medium to encompass the structural coupling between two or more living systems. Here in the domain of social relations/interactions (the relational domain hereafter), *languaging* takes place. Now in popular discourse language refers to systems of symbolic communication involving the transfer of meaning from one entity to another. Maturana disputes this logic first because of the organisational closure of the nervous system, and second because it violates the principle of structure determinism. Instead he argues that languaging is rooted in behavioural relationships; describing it as *"that which happens when it is possible to observe behavioural coordinations between two or more entities"* (1988, p. 67). In its minimal form this simply involves one entity doing something on the consequences of the behaviour of another. But for human beings it is infinitely more complex as various recursions of behavioural coordinations occur. These occur in networks of structural coupling which provide the context and opportunity for people to agree on using linguistic tokens for specific behavioural coordinations. 'Objects' and 'situations' arise through this process. Although the basis of the object (e.g. chair) is rooted in behavioural coordinations (e.g. sitting down), with consistent and prolonged usage it becomes – to the

people involved - an entity in-itself (e.g. whether you sit on a chair or use it as a weapon, it is still 'a chair'). In other words the object eventually comes to obscure the behavioural coordination (1987, p. 210). Once objects have been 'brought forth' in the manner just described, they can be referred to. This foreshadows the development of more abstract entities such as height, weight, speed etc. Moreover it allows people to refer to themselves, thereby opening up possibilities for self-awareness and self-consciousness.

According to Maturana, this continual weaving of linguistic networks through social interaction as a distinctive *'manner of living'* is what constitutes the human being as the class of living system that it is. It involves a continual bringing forth of new descriptions, new explanations, and new realities - with others - through an on-going social process. On this view it is less a case of human beings *using* language (the conventional view), and more a case of the species being constituted as the living system it is through its distinctive *languaging* capabilities. Against this theoretical background, let us now return to the idea of reframing.

3. THE STRUCTURE AND CONTENT OF FRAMES

People's descriptions of organisational phenomena do not come out of nowhere; in most cases they reflect some sort of knowledge structure. 'Paradigms' (Kuhn, 1970), 'cognitive schema' (Fiedler, 1982; Fiske and Dyer, 1985), 'personal constructs' (Kelly, 1955), 'habits of mind' (Margolis, 1993), 'frames' (Streugert and Nogami, 1989), 'cognitive maps' (Eden, 1989; Weick and Bougon, 1986), 'mental maps' (Schutz, 1964; Senge, 1990), 'intentional content' (Husserl 1900, 1901) are just some of the terms that have all been used for this purpose.

Those who advocate reframing employ the same basic idea of knowledge structures but surprisingly they are not keen on providing much detail on what these entail. Thus Bolman and Deal (1997, p. xi) claim that we need to produce *"versatile and flexible leaders . . . who can reframe experience to discover new issues and possibilities",* but they are silent on what a frame is, and on what process is invoked when we 'frame' or 'reframe' something. Checkland (1981, p. 220) claims that *" . . . every statement about a problem situation must be a statement about the system plus a particular Weltanschauung associated with it".* But when pushed by Fairtlough (1982) to provide an adequate description of the *Weltanschauung* idea, the best Checkland can do is refer to it as a set of assumptions about a problem situation taken as given in communication between members of social groups. He and Davies (1986), remark that the term is deliberately used in a broad sense and claim that little would be gained by pursuing debates about 'personality assessment'. Since Checkland's reframing methodology aims to *" . . . change as well as to explore . . . people's viewpoints . . . "* (1986, p. 109, emphases added) we believe that this is rather odd. Surely Fairtlough (1982, p. 132) is right; if the aim is to change something, then we need to know what it is that we are changing.

In the same tradition as Kuhn (1970), Lakoff and Johnson (1980), and Pepper (1942), Morgan claims that metaphors have a major impact on the way we think and on our everyday knowledge. Citing Aristotle's claim that *"it is metaphor that creates most knowledge",* Morgan (1997, p. 379) defines metaphorical analysis as an image crossing process *"whereby A is seen as B".* But is it as simple as that? *Is* this where *most* of our knowledge comes from? Are understandings simply a reflection of metaphorical analysis,

or are they a subset of some larger hierarchy of cognitive processes only some of which take place in language? If metaphorical analysis is only part of a much larger cognitive process, then the effect of using metaphors to create reframed actions may be rather limited.

In looking at what Maturana might add to our understanding of the knowledge structures that reframing (and action research, more generally, see Eden and Huxham 1996, p. 531) aims to reveal, enlarge and possibly change, it is important to first recall that he operates with a much broader definition of cognition than many of the aforementioned authors. On his 'cognition as effective action' view (see also Feyerabend 1987, Heidegger 1927, Introna 1997, Merleau-Ponty 1961, Schon 1983, and Varela et.al 1991), cognition is an integral part of our normal everyday activity – our 'being-in-the-world'. It is embodied in patterns of behaviour which are triggered by our interactions and which have developed through our structural coupling. On this view, many of the 'frames' that we employ to interpret and deal with the world, are inextricably intertwined with our cultural practices, and they are enacted sub and pre-consciously.

In extending the linkage between cognition and action, Maturana's colleague and co-author Francisco Varela speaks of *enaction* or *embodied cognition*. This describes how experiences are gained not only through thinking and sensing (the conventional view), but also through learned physical bodily movements. It conceptualises cognition as an *active* construction involving the whole *body*. So effective action is contingent upon having a body with various learned sensorimotor and orienting capacities that allow us to act, perceive, and sense in distinctive ways. If the body has not learned how to orient itself in such a way that the relevant cues are picked up (i.e. if the body does not know 'where to look') then we stand to miss that which others might pick up. This has some very important implications for reframing that we shall return to later.

Cognition then, is not something that is restricted to organisms with advanced nervous systems. Neither is it synonymous with Cartesian-philosophy inspired notions about using language to build representations in the brain. The brain, thinking, and language are merely mechanisms and structures through which cognition *can* operate.

Having said all of this, we human beings *do* have an advanced nervous system and we *do* have extensive languaging capabilities which allows us to abstract and reflect on our experiences. In this regard it is interesting to look at what Maturana has to say about what framing, as a *specific* aspect of *human* cognition, might involve.

For Maturana, the linguistic process that we are referring to as 'framing' involves a dynamic that begins when an observer attempts to *explain* his/her experiences of some organisational phenomenon. In daily life Maturana claims that for someone to regard a statement about any phenomenon as an *explanation* of it, two criteria must be satisfied. First, people seek - from the realm of their experiences - a *generative mechanism*. This depicts a sequence or history of events structured along the lines of: *if such and such happens, then something else* (the phenomenon to be explained) *will result*. If, as is the case in organisational reframing, the experience to be explained is a problem situation, then the generative mechanism would be some reformulation of the person's experience into a story or sequence of events of how the problem situation came to be whatever it is experienced as being.

The second component in an explanation involves a listener applying some other criterion in assessing the validity of the generative mechanism. This might simply be a preference for one generative mechanism over another (for example in explaining a natural phenomenon there might be a preference for physical explanation instead of a spiritual explanation). Alternatively the listener might invoke a highly formalized criterion of validity such as that which applies in the so-called scientific method.

Aggregating the various entities and processes that are both explicit and implied in the generative mechanism and the informal criterion, creates what Maturana (1988:33) calls a *domain of explanation*. Defined by the criterion of validation used by the listener to accept a given reformulation of his/her experiences as an explanation of it, each one of these has its own system of *operational coherences*. In other words the various experienced elements, concepts, claims, facts, speculations, myths, nuances and reflections belonging to the domain *hang together* in a regular and predictable manner. As an example consider Checkland's (1989, p. 81) notion of a prison as a criminal training system. The coherences might include components such as junior/senior 'pupils', 'teachers', and 'headmaster'; it might contain norms and protocols pertaining to how people occupying these roles should and should not interact; and it will almost certainly include processes and events such as learning, apprenticeship, testing, examining and graduation. For someone explaining declining economic performance from a domain of explanation loosely based on the values promulgated through new right economics, the coherences might include notions of inadequate financial incentives for investors, distortions in the functioning of the labour market brought about through compulsory unionism, protectionist national economic policies, high levels of indirect taxation reducing incentives to work, and high levels of welfare spending creating disincentives for beneficiaries to seek employment. In the same vein, each of Morgan's 'images', and Bolman and Deal's organisational frames have their own sets of coherences. The basic point is that when someone explains a situation based on his/her preference for that particular type of explanation whatever it might be, and based on his/her 'storyline' about how the situation came to be, the various coherent elements – as they are experienced - *hang together* in a regular and predictable manner.

Each domain of explanation specifies other domains. First, it specifies a domain of facts. On Maturana's view there are no such thing as independently existing facts so the facts that pertain to the domain are limited to and contained within its boundaries. Second, it specifies a domain of reality. While the various aspects of explanatory domains are purely experiential, nevertheless we frequently *live* them as domains of facts and they specify objects that we *live* as if they existed independently. Third, explanatory domains specify a domain of rationality; i.e. deductive reasoning can go on *within* its boundaries. And fourth, each domain of explanation constitutes a domain of legitimate actions (and statements of actions) that the observer regards as legitimate because they are supported by the explanations that he or she accepts in that domain. Finally it is important to note that cognitive domains arise within the context of social networks (more on this later), and as members of these networks we inculcate the contents of highly specific sets of cognitive domains. These domains are self-contained, but because they intersect through our bodies and because we move from one to another continuously they effect each other. Thus our participation in them becomes a source of change.

In summary, while Bolman and Deal, and Morgan have much to say about the *specific* content of *some* frames they have little to say about their *general* content. Checkland says

little about the general *or* the specific content of these structures, preferring instead to concentrate on using, reflecting on, and refining his reframing methodology through practical application. In this context, Maturana's contribution is valuable because he provides a very precise *general* description of the nature of the specific entity that the framing – reframing process seeks to reveal, enhance and alter. And it is this final point – the idea of altering people's frames - brings us to the important matter of where they come from in the first place.

4. THE ORIGIN OF FRAMES

Most of the advocates of reframing acknowledge that frames depend upon people's backgrounds and their historical interactions and that moving to multiframe thinking or taking on board a new frame is not always easy. In claiming that *" . . . our previous experience gives us in-built readinesses to notice or not notice certain features of a complex situation as significant . . . "* (1990, p. 192) and, as a result, *" . . . it is characteristic of us that we cling tenaciously to the models which make what we observe meaningful."* (1981, p. 216), Checkland hints at the communally inter-subjective nature of frames, and recognises that there are social constraints on individual action. Similarly Morgan (1993, p. 274) acknowledges a linkage between power relations, social constructions, and action.

In the light of this acknowledgement that there are such historical, cultural and political constraints acting on people, it is rather odd that these authors implicitly endorse the individually subjective nature of frames and give so much credence to the ability of reframing to enhance creativity and foster change. Thus Checkland (1981, p. 218) claims that people have *"irreducible freedom . . . to select from a range of possible meanings"*. And Morgan (1993, p. 9) writes, *"the process of imaginization invites creativity. Just as it encourages us to see and "read" organisational situations with fresh perspective, it also invites us to "write" our organisations in new ways"*. Bolman and Deal are a little more circumspect. They claim that the use of multiple frames permits leaders to see and understand more, *"if they are able to employ the different logics that accompany different frames"* (1997, p. 379). Yet Bolman and Deal's overriding message is that providing managers are open-minded, multi-frame thinking and reframing can fully deliver on its promises.

So while these authors acknowledge the constraints on creativity they do not examine them in any great detail. Primarily they are concerned with analysing and assessing why the people involved experience situations the way they do, and in investigating ways in which they could view things differently. All of which, as Palmer and Dunford (1995, p. 2) note, reveals a preference for a voluntarist approach in understanding human action and an idealist stance that emphasises the connection between people's thinking and their action. These assumptions are built on the premise that people's understandings are individually subjective and that it is within the range of what is possible for people to enact different worldviews.

Now this position is unsatisfactory not because the reframers acknowledge that people's actions are both constrained and enabled. Rather it is because, in failing to fully explore the constraints, they do not adequately foreshadow and specify the difficulties of delivering on their various promises. This creates some obvious difficulties most notably

for facilitators who are charged with the responsibility of managing the reframing process through collaborative debate.

In general terms, Maturana would agree that there are constraints and possibilities when it comes to people increasing their repertoire of frames or attempting to replace one frame by another. However, whereas Morgan and the rest acknowledge the constraints but provide little in the way of an assessment of the *extent* to which they might be problematic – choosing instead to highlight the creative potential of reframing – Maturana's ideas allow us to propose an answer to this very important question. This answer revolves around us having a very clear idea on what - as phenomena – frames are, on knowing where – as phenomena - they are located, and on knowing how the process through which they arise relates to what is going on in other phenomenal domains that are involved when people frame and reframe situations. While this is an obscure and somewhat convoluted question, it is a vital one especially for those who are likely to be interested in the extent to which change through collaborative debate is possible, and who need to know how best to facilitate this.

Maturana's account of the *relationship* between the *two* phenomenal domains involved in observing is pivotal in the context of this discussion. He claims that if we do not look to the origins of observing (the conditions that generate it) we do not see that there are *two* domains involved – the domain of physiology and anatomy, and the domain of relations with a medium. Moreover, we do not, he says, appreciate that each domain has a very specific role to play. We are inclined to regard observing as an endowment or a property of the human condition, and, as a result, we collapse the two domains into one. He regards this as a serious logical error on the grounds that although the two domains interact they do not superimpose, and importantly, because phenomena belonging to one are not explainable in terms that are more appropriate to the other. Simple acts of human behaviour such as walking arise out of the interaction between the body and the medium and can only be explained as such. The anatomical movements that are involved in walking result in different observable behaviours depending on the nature of the medium. On this view, all behaviours are relational phenomena that arise when we witness a system interacting with a medium. They are, as Maturana and Varela (1987, p. 166, emphasis added) put it, " . . . *an outside view of the dance of internal relations"*.

The same logic applies when people frame and reframe problem situations. These activities - *including the frame itself* - arise in the relational domain and must be explained through what goes on there. Thus, Kay (1997, p. 77) comments that, *"an individual's worldview is an emergent property or distinction placed upon them by someone's description of their behaviour – it does not exist as part of the individual's cognitive process . . . an individual's worldview is just as much a function of the observer as it is a function of the individual's nervous system"*. Here Kay echoes sentiments expressed by scholars such as Habermas and Mead who argue that concepts such as the self that we tend to regard as being highly individualistic, are inherently social. Moreover Kay reinforces Mingers (1984) critique of Checkland's methodology in which Mingers claims that meaning develops intersubjectively, and because of this, it may be taken to exist independently of people in the social domain.

A further implication of Maturana's clarification of the two domains involved in observing is that it invites us to dispense with the idea that language is merely a means of representation, and that interpreting the world is a mentalistic information-processing

activity that takes place in the brain. Instead, as we have seen, it proposes that languag*ing* is – by its very nature - a social phenomenon that arises in and belongs to the relational domain. The phenomenon of language does not occur in the brain; rather it occurs in the recursive coordination of interactions in the flow of living together. Here there are very strong parallels between Maturana and Wittgenstein's (1953) idea of 'forms of life'. Words, on this view, derive their meaning from the contexts in which they are used, and these in turn depend on social practices and ultimately on ways of living (see Magee 1987, p. 339).

Frames then, are social phenomena that are inextricably intertwined with the rest of our activities. They are a product of what happens when people, living and co-ordinating their behaviours, often over long periods of time, communicate and exchange explanations of their experiences. At least that is how we believe Maturana would see it. If he is correct then it raises serious doubts about the extent to which it makes sense and the extent to which it is possible to separate frames from people's daily lives and examine them in isolation.

Against this background, it is manifestly clear that, to a greater or lesser degree, the advocates of reframing discussed here commit the logical error of which Maturana speaks. Thus, at one extreme, Checkland suggests that there is some direct *Weltanschauung*-related physiological or anatomical structure - responsible for information processing - hard-wired into the brain. We attribute meaning, he says, *" . . . to the observed activity by relating it to a larger image we supply from our minds"* (1981, p. 215), and we have *" . . . in our heads stocks of ideas by means of which we interpret the world outside ourselves"* (1990, p. 19, emphases added, see also p. 20, p.217).

Morgan's use of the term *lens* (1986, p. 350) to describe the process through which metaphors operate in helping people to see the world, places him in pretty much the same camp as Checkland. The lens in the eye filters and guides the transmission of information from a world *outside* to a brain *inside*. Similarly Bolman and Deal claim that frames are *"mental model*(s)" (1997, p. 12), which are *" . . . both windows on the world and lenses that bring the world into focus . . .* (they) *filter out some things while allowing others to pass through easily"*. Thus, managers and leaders who can reframe situations *"can see organisations through a powerful prism."* (1997, p. 380).

While these authors would have us believe that frames are specific knowledge structures in the nervous system through which passes chunks of data about an outside world, Maturana leads us to conclude that frames are neither carried around in the brain, nor does any particular frame has its own localised engram inside the nervous system. The only 'thing' that one might say human beings do carry around with them is a nervous system whose distinctive structure mirrors previous interactions. This structure makes observing possible, and it circumscribes what frames are possible as well as those that are not. Thereafter the *specific* frame, along with the understandings and actions that emerge from it, arises as a *reformulation* of the speaker's experience that takes place *in* language *in* the relational domain, *in* the moment in which it occurs. In that sense the frame belongs as much to the circumstances in which it arises, as it does to the individual who might be articulating it.

It follows that because any emergent reframings depend on the nature of the relational circumstances there must always be doubts about whether these are new and/or whether

they are sustainable beyond the physical and temporal boundaries of the situation in which they arise. When we have conversations about an organisational phenomenon with ourselves (i.e. think about it) at different points in time, or when we interact with and speak to different people about it, very different (and possibly contradictory) understandings of that phenomenon are possible. When, as Checkland and the others would have it, frames are taken to reside 'inside the head' attention is almost inevitably diverted away from the relational context where they reside towards the particular individuals involved. This gives these frames and understandings a sense of continuity and stability that may be overstated. And it is problematic for two reasons. First because it does not sit comfortably with our knowledge of the extent to which our own and other people's views change in daily life; second because it can lead us to overestimate the amount of creativity and change in thinking that goes on during multi-framing and/or reframing exercises and to be overly optimistic about the extent to which any emergent reframing will extend beyond the physical and temporal boundaries of the situation in which arises.

Relatedly, couching the frame concept in terms that are more appropriate to the domain of anatomy and biology has important consequences for our understanding of the sorts of things that are likely to occur during reframing events. When someone's thoughts and descriptions are seen to reflect the operation of some filtering and information processing structure in the brain, we are almost inevitably compelled to explain changes in the former through reference to *changes* that are occurring to the person concerned. This being the case, it is hardly surprising that reframing is commonly referred to as involving learning. Thus Checkland, for example, claims that his approach " . . . *embodies a paradigm of learning . . .*" (1981, p. 287); it is " . . . *a learning system*" (1989, p. 78), where " . . .*the outcome . . . is . . . a learning which leads to a decision to take certain actions . . .*" (1981, p. 213).

Consideration of Maturana's ideas lead us to believe that processes such as those envisaged by Checkland and in Morgan's group and C-Plan interventions *can* indeed promote learning where one frame takes over from another or where the repertoire of frames is enhanced. No doubt the same can happen when an inquisitive manager reads the elaborate frame descriptions provided by Morgan and by Bolman and Deal. Indeed Maturana claims that learning takes place constantly as there is a constant structural transformation of the system in line with transformations in the medium. On the other hand, it would be incorrect to automatically associate shifts in people's thoughts and descriptions with the idea that a new frame has 'taken over' or that there has been an extension to the individual's repertoire of frames. Based on the theoretical distinction just described, an equally plausible explanation is that such changes merely reflect the specific circumstances of the relational domain in which they occur. We are thus drawn to the conclusion that participating in collaborative reframing exercises or ploughing conscientiously through the frame elaboration texts will almost certainly help those involved see things differently, but whether this is sustainable is another matter. Because the reframers do not make the necessary distinction between the two phenomenal domains involved in observing they are ill equipped to account for the common observation that people's initial enthusiasm for new ideas can wane very quickly.

While confusing the role played by these two phenomenal domains can lead to the problems just described, it would be wrong, as we have just said, to discount the possibility of learning or of enduring change. Because there is a reciprocal relationship

between the two domains, what happens in the relational domain can trigger structural changes in the nervous system, i.e. learning (see Winograd and Flores 1987, p. 44-47). Once there is a change in structure then we can expect the person concerned to think differently in the future. But the structure will not *determine* what happens in the future. Again, what happens in the future will depend on the prevailing relational circumstances.

Finally although the advocates of reframing admit that the process *can* be difficult, their conception of language as something that is tied to the operation of the nervous system (i.e. frames 'in language', 'in the head') may lead them to underestimate exactly how difficult this can be. As Maturana and Bunnell (1998, p. 9) put it: *"Language, as a phenomenon, is . . . a manner of flowing in living together in a path of coordination of the coordinations of coordinations of behaviour . . . it pertains to the concrete domain of doings."* On this view, contemplating reframings that bear little resemblance to the world that people live and experience in daily life, is tantamount to requesting that they rewrite their own individual and social history, and to circumvent the thoroughly pervasive impact that their daily circumstances and interactions have upon them. We shall return to this point later.

In summary, clarifying the role played by the two domains that are involved in observing provides a basis for better understanding some of the nuances and complexities that are involved when people explore existing frames and apply new ones, or when they engage in multiframe thinking. Conceptualizing frames as relational phenomena leads us to conclude that while the various understandings and actions that might emerge through reframing are realised through people, and are made possible by their structures, to a large extent they will reflect the prevailing relational circumstances. This brings us to the important question of what these circumstances might be.

5. THE DYNAMIC THROUGH WHICH PREFERRED FRAMES EMERGE AND ALTER OVER TIME.

We are told that multi-frame thinking leads to a more comprehensive understanding of problem situations and that the emergent reframing allows us to find the best way of dealing with the issue at hand. So the message is that people must first *widen* their repertoire of frames and then, if the circumstances demand it, be able to operate with *particular* frames. In this vein the literature advocates using specific (but not exhaustive) sets of highly elaborated frames that, when used in combination, *"permits leaders to see and understand more"* (Bolman and Deal 1997, p. 379), and *"read and judge the circumstances presented to gain a full understanding"* (Morgan 1988, p. 8). But, aside from the philosophical matter of whether frames *reveal* different aspects of a pre-existing reality or *constitute* different realities (see Tsoukas, 1996), one wonders how feasible this is. Unfortunately the reframing literature does not fully explain how preferred frames arise in the first place. Neither is much said about what determines the strength of people's attachments to these, and – importantly, since in reframing this is what is supposed to happen – how they change over time. It is simply assumed that frames can be changed and extended by reading the texts and through collaborative debate.

5.1 From one frame to another – the conversational flow

In explaining the complex dynamics that underpin the emergence of cognitive domains, Maturana's notion of *conversation* is pivotal. This term, which extends greatly the

vernacular meaning of the term, describes two interrelated processes – languaging, which we have already said is rooted in behavioural coordinations - and *emotioning*. Emotioning refers to particular bodily dispositions that specify various actions. These determine the actions that are possible and those that are not. Thus, as people shift from one emotional state to another, changes take place in the kinds of things that they will and will not do. People behave differently, they see differently, and they describe and interpret things differently according to the emotion in which they do these things. On this view, every rational system in which we operate *". . . is grounded on basic premises adopted through our emotioning."* (Maturana, 1988, p. 62). We think we live as rational animals, but we do not, *" . . . we are emotional animals who use reason to justify our desires."* (1998, p. 25).

In dissolving the emotion – cognition duality in this way, Maturana sets himself apart from those who primarily seem to regard reframing as an intellectual activity. Thus in claiming that *"we may respond in various ways: by instinct, emotionally . . . or by the application of our ability to reason",* Checkland (1994, p. 9) regards emotion and reason as fundamentally *different* ways of responding to situations. To the extent that they claim that reframing *allows for* emotion, Bolman and Deal's (1997, p. xiii) perspective is somewhat less dualistic, but it still seems to rule out the possibility that emotion is an ever-present aspect of reframing.

Like languaging, while emotional predispositions become embodied in the structure of the observer, they are relational phenomena that arise in the context of social networks. Maturana calls these *consensual domains*. Here people learn their emotioning and their languaging with other people, and, through recurrent interactions, structural patterns become conserved. As an aside, it should be noted that languaging and emotioning are braided; each process effecting the other.

That people participate in not one, but in an infinitely large number of conversations, further complicates the picture. At any moment a person's *bodyhood* is a node at the intersection of many different conversations, each one of which has its own braided flow of distinctions and emotions that have been learned through recurrent interactions over time. This means that just as thoughts and descriptions within a single conversation are subject to change depending upon the flow of the conversation, they can also alter as the observer shifts – in his/her thoughts, or in interaction with others - from one conversation to another.

Against this theoretical background, let us now make some general comments about the difficulties involved in moving beyond preferred frames to multi-frame thinking and reframing. Recall that because of its idealist assumptions the reframing literature takes these processes to be largely unproblematic. In particular, creating shared reframings is left as some form of trick that the facilitator must somehow conjure up as best he or she can, or as something that magically occurs as a result of learning.

5.2 The difficulties of moving from preferred frames to multi-frame thinking, to reframing, and beyond

(i) The concreteness of experience and the cognitive closure of frames

Reframing we are told, is a process through which new understandings provide a basis for new actions. We can surmise that these are underpinned by new or redrawn frames that fix both the way the problem situation is viewed and the outcomes deemed to be acceptable as solutions. Now because frames arise in conversations, i.e. in flows of languaging and emotioning then it seems reasonable to regard reframing as a process in which these new boundaries emerge as a result of conversational negotiation. This seems to be pretty much what the reframing literature is getting at.

Unfortunately conversations do not happen automatically. For a start people have to circumvent the concreteness of their experienced worlds and be open to alternative constructions of reality. Conversations, Maturana claims, depend upon people participating under the emotional state of *"mutual acceptance"*. To this end, participants must be prepared to couch debates about competing frames more in terms of personal experiences and preferences (see section 3 above) than in terms of what they might regard as being the facts or the best way of looking at the situation in question. Yet getting people to even reflect critically on their existing frames let alone getting them to accept others and to voluntarily expand or change their understandings may be problematic. As Maturana makes clear, for much of the time we human beings believe that we see the world as it is. We grow into the language of a consensual domain gradually so it is often difficult for us to see how its rationalities reflect anything other than the way things are. Observing naively; that is, separating the influence of our own language from that which is seen, is very difficult once language, words and symbols become an integral part of our experience.

When the rationality of the cognitive domain is sustained by entrenched interpersonal conversations and taken for granted day-to-day actions, the chances of it being questioned may be slim. Moreover, like the 'sandboxes' in which children play their games (see Efran et. al. 1990, p. 45), each domain has its own boundaries, its vocabularies, and its grammars of interaction. And our normal mode of bonding with it is tacit and unreflective. Thus, we cannot, says Maturana *" . . . get out of a cognitive domain . . .(or) . . . observe a cognitive domain by operating in it"* (1988, p. 61). Even when someone *is* inclined to delve into their own preferred frames it is hard to stop subsequent interpretations being grounded in, and constrained by, the very frame which is being reflected upon.

In collaborative situations these difficulties are exacerbated. In such cases the emotional state of mutual acceptance is required to avoid the negation and conflict that occurs when there is an attitude of certainty, where the participants operate from the conviction that they have access to the truth – that he or she knows how *'things really are'*.

At the same time, none of this is impossible. Indeed, reframing events are not unlike the situation *"when some interaction dislodges us – such as being suddenly relocated to a different cultural environment . . . "*, which Maturana (1987, p. 242) claims, can trigger the sort of self-reflexive inquiry that successful reframing depends upon. Furthermore, we are not incapable of bracketing objectivity. As Maturana (1988, p. 84) notes, in daily life we routinely switch from *an 'explanatory path'* that assumes that we see the world the way it is, to one in which we are more open to alternative explanations of what is going on. Basically we move from one to the other in accordance with changes in the flow of our emotions, most notably according to how we relate to the other person. When the relationship is paramount we bracket objectivity. We participate in the relationship in

full awareness that we are neither objective nor that we own the truth. We may not agree with what the other has to say but we are willing to listen, and we are willing to give the grounds for the validity of what we claim. If the relationship is the important thing then the conversation can continue, even in disagreement.

The main point is that if there is to be any chance of successful reframing then there must be a conversation. For there to be a conversation individuals must be willing – if only temporarily – to bracket objectivity. And, if we are speaking of collaborative reframing, then the people involved must value and see some point in maintaining the relationship that they have with each other.

(ii) The broader constraints: emotion, day to day practices, and embodied cognition.

At this point it is worth recalling Checkland's statement that people have *"irreducible freedom to choose"* and Morgan's declaration that his approach *"invites creativity"* in reading situations and writing organisations in new ways. Yet if Maturana is correct and our frames are *". . . grounded on basic premises adopted through our emotioning. . . that we live . . . as manners of existence . . . as all-embracing manners of being . . "* (1988, p. 62), then once again we are compelled to conclude that it may not be that easy.

Obviously the extent to which this is problematic depends on the nature of the frame. Switching from one research paradigm to another for example is likely to be much more problematic then switching from one of Morgan's (1993) visual images of an organisation to another. While the issues are the same frames obviously vary in their significance to the individual concerned.

In this context the reframing literature conveys the impression that it is primarily rationality not emotion that is in a dominant position as the basis for choice and action. Yet if Maturana is correct; real embodied people *always* act in a way that is conditioned by their emotions (see Mingers 1997, p. 428). This suggests that if new frames are to be viable as a basis for action the appropriate emotional predisposition has to exist, or it has to be somehow developed. It further means that the strength of people's emotional attachments to existing frames may constrain reframing as may the various conversations that nourish and sustain these and the daily routines, practices and organisational structures that reflect these conversations. Recall that the mechanism through which framing takes place, *languaging*, is grounded in concrete day-to-day coordinations of behaviours, routines and 'doings'. These arise naturally in social settings where they are an integral part of the coherences of the situation. In such a context preferred frames are what they are because they work; they are viable. This means that any proposal that involves changing people's frames must be assessed in relation to the coherences of the situation in which it is proposed that they be introduced. When people's understandings are embedded in organisational practices they cannot simply step outside of these by going along with some new preferred viewpoint or belief system.

Even if people can be persuaded that there is logic and value to what is proposed, there is still the question of the extent to which they are *able* to make the necessary changes. Convincing people that a new understanding or behaviour makes sense is one thing but there is more to it than that. New rules have to be inculcated, and new skills, new daily practices, and new emotions have to be learnt. Because the coherences of any rational domain are woven so completely and unobtrusively into the fabric of everyday life, and

because the conversations sustaining the old understandings may still exist, leaving one and moving into another can be notoriously difficult even if the will to do so is there. Moreover if we accept that the broader enactive or embodied notion of cognition has any veracity at all, then there is the whole question of the extent to which people's existing pre-conscious physically embodied 'knowledge' fits with the new reframed actions. Just as importantly there is the question of whether the people involved have structures that will allow them to acquire the pre-conscious, physically embodied knowledge that underpin, and are an integral component of, the reframed actions. Because of their very nature these cognitive requirements do not surface when someone is reading about or discussing new frames. However this observation does not diminish their importance.

(iii) The specific difficulties involved in developing shared reframings through collaborative debate

Maturana's proposition that conversations take place in networks of structural coupling highlights another potential difficulty that arises in the context of collaborative reframing. While the methodologies of Checkland, Eden, Morgan, and Flood and Jackson, aim to create a social system in which participants can negotiate and renegotiate their realities, this can only happen if the various participants are structurally coupled with one another. Indeed since, on Maturana's view (1987, p. 193), the *constitution* of social systems entails the reciprocal structural coupling of the components, it does not make sense to speak of collaborative reframing as a social system unless this condition is met. In practical terms for one person to have any influence at all on another, the two must be structurally coupled. In other words the structure of each participant must be such that the other participants and the various activities around which the debate is structured can trigger structural change. Participating in the debate – simply *being there* – is not enough.

Again since none of this can be expected to happen automatically, it means that the facilitator must aim to understand the structure of the various participants in order to promote effective interaction. There is a need to know what triggers people, to recast questions and statements in such a way that each is capable of triggering a response. There is a need to develop a clear understanding of the various participants, to understand their meanings, their values and priorities, and to communicate with them on their terms. In other words the facilitator needs to become *"a scholar of structure determinism"* (Dell, 1985). In this regard appreciating the culpability of language is a big advantage to facilitators because language becomes a key instrument in eliciting structural change. Listening to the language the target audience uses is important because it reveals its structures and the various worlds it brings forth.

More broadly the role of the facilitator is akin to that of a highly skilled conversational artist who, in a participant-manager role, has to create a space for and facilitate a dialogical conversation (see Goolishian and Winderman, 1988). He/she has to create the kind of relationships between the participants in which all feel that they have a significant role to play, and that their views of the problem situation will be treated as valid by others. Once this has been accomplished he/she has to coordinate the many conversations that are involved as the framing – reframing process unfolds.

The question then arises as to the extent to which the facilitator can be proactive in moving the participants in the direction of new framings. Clearly this is not straightforward. For Maturana the capriciousness of persuasion and direct instructions in

bringing about change is linked to the idea of structure-determinism which disavows the possibility of linear cause-effect explanations of change. Should a facilitator seek through persuasion or direct instructions, to influence the group in moving in some pre-determined direction (i.e. carry out what Maturana calls an *"instructive interaction"*) the outcome is likely to be highly uncertain. At best the target audience might simply choose to ignore the facilitator or compensate for the external perturbation according to its own structure determinism. This should not surprise us since in daily life we know that people do not always change their opinions when teachers, parents, managers, and politicians present them with sound logical reasons why they should. There are no reasons for believing that this would be any different in collaborative reframing.

However, drawing on the application of Maturana's ideas in family therapy, it is possible for the facilitator to find what Maturana calls a *"significant orthogonal interaction"*. This involves choosing a statement or interaction that is *outside* the domain of conversations that defines the existing frame so it is not confirmatory of it, but which takes place *in* the domain of existence of the recipient. While in practice this can be difficult, it is not alien to us because in daily life we regularly participate in interactions that are orthogonal to a particular conversation without this affecting our participation in it. The point is that the non-confirmatory interaction that involves moving into a new frame has to be sufficiently different to help bring about change, but it has to 'fit' with the structures of the people concerned and be 'safe' and credible to them (see Bilson, 1997; Efran and Lukens, 1985). Finally the issue of emotion and preferences arises here. Because *" . . . the emotional dynamics of co-existence . . . goes through seduction, not through obedience"* (Maturana, 1988, p.77}, ways have to be found that will involve people *wanting* to accommodate the new frame, the emotional shift being as important if not more so than the rational shift.

The main point of the preceding section is that while the reframing literature tends to focus most of its attention on either frame elaboration or on methodology development, we submit that as much, if not more emphasis ought to be placed on how one might go about managing the human aspects of the process and dealing with the various people involved. In the event that this happens, an effective conversation between the participants can occur and new framings that were not previously available, or that previously had been taken for granted, may emerge. In such circumstances the group might agree on action *" . . . which seems sensible to those concerned"* (see Checkland, 1989, p. 78). However we must be careful what we read into this. It is relatively easy for a participant to say that reframing has taken place; it is much more difficult to state categorically that there has been change and learning. As Nicholls (1987, p. 239 emphasis added) puts it, "*It is a mistake to think that the right reframing/problem structuring <u>statement</u> transforms experience – not for long it doesn't*".

Moreover, even if the conversation does produce such an agreement, we cannot be sure that this reflects, as is often claimed (see Checkland and Davies, 1986), a shared frame. Indeed, if we think about it in the context of what was said earlier about how, in daily life, people explain their experiences, the proposition that there is an emergent shared frame seems rather unlikely. Recall that it would require the participants to accept that a particular 'story' of how the problem has come to be is 'correct', according to some acceptance criterion that they apply in thinking through various alternatives. In coming to accept a storyline as valid, the participants will make further deductions about what other phenomena they would logically expect to experience if the story is 'true'. If they then recognise that they have indeed experienced – or could reasonably expect to experience -

such phenomena, then they will come to accept the story's plausibility. Now one can see how these conditions might be met among groups of people – such as a work team or, to a lesser extent, a family – who participate in conversational flows over a prolonged period of time and where they interact recurrently as they go about their daily business. In such circumstances many experiences will be shared, especially if those involved are of the same age, ethnic background, and gender. One might also expect shared explanations and shared criteria for assessing the validity of these. But the situation just described is a far cry from what tends to be the case in most collaborative reframing exercises. Although the various participants (often stakeholders) may have a common interest in the problem situation, they are generally together for a relatively short period of time, they have different backgrounds and they bring to the debate an infinitely large range of diverse experiences.

(v) Beyond the event itself - the wider sustainability of reframings

Finally, having a clear understanding of the conversational dynamic that underpins people's framings of organisational situations raises yet again the matter of their on-going commitment to any emergent understanding. As we have seen, what happens during reframing *can* trigger structural change in the participants, and this will have implications for other conversations in which they participate. However because descriptions and understandings are only *made possible by* and *not determined by* their structure, then some inconsistencies of opinion or even contradictory understandings can be expected. For many people the emergent reframing will be associated with just one conversation among many that vies for their attention, so it would be erroneous to assume that an opinion thought or voiced at one point in time will necessarily be repeated elsewhere and/or later. In any event a framing is a reformulation of experience that arises in the moment and depends on the prevailing relational circumstances. The reformulation intersects with but it does not superimpose on the experience. This conclusion creates difficulties for those who have an interest in promoting reframing as a process that leads to sustainable change. On the view expressed here we are compelled to suggest that while sustainable change is possible, the framing-reframing process is basically a situated and bounded conversation or set of conversations which may or may not lead to enduring and sustainable changes in people's frames and in the understandings and actions that arise out of these.

Consuming the contents of the classic reframing texts or participating in collaborative reframing then, is only ever likely to be a starting point for change. And ultimately what happens to people in any moment depends on their structure. Activities that take place in language such as agreeing to reframe a situation in different ways are only one among many sources of perturbation. Thus Maturana (1988) claims that life is basically a purposeless drift in which people constantly change according to their structural determinism in response to various internal and external perturbations as they slide naturally through a medium. Moreover the structural change involved in replacing one set of understandings with another is but one moment in an on-going history of structural couplings, hence it would be rather naive to believe that a new coupling completely supersedes that which preceded it (see Margolis, 1993). There will always be doubts about whether someone who has been thoroughly socialised in one frame can prevent its unwelcome intrusion into another.

All of this suggests that while people may – through language - be able to intellectualise the framing and reframing process, inculcating and acting on an emergent reframing may be difficult. Because the reframing literature is underpinned by such strong idealist assumptions, reading it conveys little sense of how difficult all of this can be to the people involved.

6. CONCLUSION

This paper has put forward the argument that a broad perspective on human cognition is required to fully comprehend the issues that are involved in individual and collaborative organisational reframing. Because of its strong voluntarist and idealist underpinnings the reframing literature itself is ill-equipped to provide such an understanding, as is the cognitive complexity literature which fails to take into account the broader cognition-related constraints that involve language, emotions, day to day practices, social action and the body.

In using Maturana's work to critically analyse and comment on the reframing idea we believe that he provides a highly comprehensive framework that allows us to understand many of the nuances, complexities, and difficulties that are involved. It leads us to conclude that bringing about multi-frame thinking and/or reframing is extremely difficult and has ramifications way beyond the specific individuals who might be involved. At the same time we submit that having a better understanding of these difficulties paves the way for those involved to take steps, where possible, to maximise the chances that the expected outcome of linking reframing with action will eventuate.

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