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CHAPTER FIVE

Patterns of Categorical Delusions

Man is a pattern-making animal. We advance through the world, sensing the way by means of patterns: multiple schemas, fictions, ‘synthetic judgments *a priori*’ (Nietzsche, 1990), ‘a selective system of cognitive orientations to reality’ (Parsons and Shils, 1954). Each is a *partial* guess about the unknowable reality around us, which focuses the senses: the word *partial* is used here to mean both biased by previous experience and incomplete. However, cognition can be misled by our delusions just as we are fooled by optical illusions and other observational paradoxes, which trick us into misinterpretations (Lotto, 2009).

All individual interpretations of sense data start with provisional approximations. These enter a dynamic feedback loop that is the individual’s continuous negotiation with his sensing of the environment, where he often subconsciously re-collects and synthesizes perceived regularities in that sense data. These regularities then progressively and recursively adjust themselves. This on-going feedback loop is not only part of that individual’s experience of the physical world as it is, but also the culmination of the natural selection of the experiences of both the species and the social subgroups to which he, as an individual, belongs. Mostly this sampling of regularities delivers useful data that enables him to make choices, although sometimes he can be tricked, as with the optical illusions.

Of course the process itself is one of self-delusion. Optical illusions should remind us that feedback does not deliver an explanation of our world, merely a description. As Nietzsche so eloquently put it:

We call it ‘explanation’, but it is convincing ‘description’ which distinguishes us from earlier stages of knowledge and science. We describe better – we explain just as little as any who came before us. ... An intellect which saw cause and effect as a continuum and not, as we do, as a capricious division and fragmentation, which saw the flux of events – would reject the concept cause and effect and deny all conditionality (Nietzsche, 2006).

From this position, a sceptic would therefore reject Popper’s assertion of explanation as description with some form of predictive element (Popper,

2002). Prediction too is a description, but of the shapes of things to come; a description, albeit falsifiable, of a trajectory of regularities within our descriptions.

The situation is further complicated because a specific frame may be used by different people. That is, they may think they are gleaned the same meaning when using the same frame, but at the very least there will be slightly different interpretations, and therefore there will inevitably be different outcomes from applying it. The reader should acknowledge that these differences are the result of subtle differences of interpretation; they are not mistakes. Mistakes can be identified. On 23 September 1999, much to the embarrassment of NASA, the Mars Climate Orbiter burnt up in the atmosphere of the Red Planet. It turned out that the engineers who worked on the project used imperial units of measurement (feet and inches), whereas the scientists whose job it was to get the spacecraft into orbit around Mars were using metric units. When the data needed to control the flight path was transferred between the two teams, nobody thought to convert from inches to centimetres. The multi-million dollars craft went up (or rather down) in a cloud of smoke. Now that really was a mistake.

It is worth repeating, the differences in the personal delusions that are extracted from frames are not mistakes. They are so subtle, and indescribable, that we don't even realize there is a difference; hence our belief in shared-delusions, such as the so-called fact that we all grasp the same meaning from verbal and textual communication expressed in frames formed from language. The authors claim that a reader of this book will never grasp exactly what they are trying to say; every reader will impose her own unique interpretation on the words. This is not because the ideas in the book are poorly expressed (at least the authors hope not), but because the same word can never mean exactly the same thing to everyone. We each overlay personal baggage on any particular word when we continually learn its 'meaning'. Hence, even the authors themselves must admit that each of them never fully grasps the other's meaning.

Categories

Any particular delusion, that is necessarily private to an individual, may be very similar to those of other people. However, be very clear, the delusion is unique to that individual. What is more, there is no single delusion for each individual, rather a whole raft, gleaned from personal experience and communicated from others as frames. These frames give that individual a whole multitude of perspectives on the world, not all of them mutually

consistent or compatible. Over the years there have been many attempts to see common factors within this variability in order to categorize human behaviour into a small number of substantially different labels. By pigeonholing the complexity of a given individual's set of delusions under a single heading, that individual can be contrasted with his fellows, and his actions 'explained'. But this is just another frame among many others.

Such is the human lot. 'He who considers more deeply knows that, whatever his acts and judgments may be, he is always wrong' (Nietzsche and Hollingdale, 1996). But is being forever wrong a problem? No! 'The falseness of a judgment is to us not necessarily an objection to a judgment ... The question is to what extent it is life-advancing, life-preserving, species-preserving, perhaps even species-breeding' (Nietzsche, 1990). Perhaps falseness is too harsh a word here. Far better to use Nietzsche's term 'instrumental fiction': a fiction possibly appropriate for our needs, and thus appropriated by us, but a fiction nonetheless. Why useful? Because it overcomes rigid inertia, helps us make decisions and spurs us on to action.

Before continuing the authors must pre-empt an inevitable criticism of the above statements. Surely, if categories are just delusion, then by going on and on with intellectual arguments that in themselves categorize our universe of discourse, are they not just deluding themselves? Guilty as charged. But they have no choice. All cognition is self-referential. They too are human, all too human, and are stuck with the dominant strategy of our particular species, the human condition.

Thus the authors argue that the only way humanity can analyse any particular situation is by calling upon the delusion that thought has access to the truth about things, and by manipulating that 'truth' through frames and categorization. This stance is only a problem to those who believe in an objective reality. The authors won't freeze or flee from this criticism. They will fight back with the answer that they are pragmatic enough in their scepticism to prosper within their own personal subjective human realities. Not convinced? 'What convinces us is not necessarily true, it is merely convincing' (Nietzsche et al., 1968).

Categorization is internal to any observer who is observing, and who is thus, wittingly and unwittingly, creating categories. What we may refer to as categorization incorporates a series of differentiations that invariably remain invisible, because the choice of any particular category is being made individually with our impositions as observers guiding the creation of categories. We categorize without even thinking. Categorization is

subliminal, the very essence of thinking. However, it is in the social nature of humanity that we do try to share our categories with others, along with the frames and shared-delusions; thence arise language, rituals and other forms of social intercourse. There categorization is externalized, made concrete, as with plans of action, ideologies, and in its most solid of forms, namely artefacts and technology.

Appropriate or Inappropriate?

Any category and any framework of categories, used either to identify or to extract 'useful' information from what has been observed, cannot hide its artificiality indefinitely. Even though such frameworks are contrived, some critics would say simplistic, they can prove successful in that they are useful in particular contexts. However, the appropriateness of applying any particular framework is a conclusion that can only be made after the fact. Nevertheless, following previously successful applications, a particular categorization is often taken to be appropriate in itself.

A very important point is being made here: whether or not the categories are valid is not the issue; rather that we humans have the tendency to categorize in order to 'understand and explain', to reflect, thereby changing uncertainty into perceptions of risk, and freeing us to act. By accepting any frame as a working hypothesis, we can formulate 'answers' to the problems we ask ourselves. Of course, the extent to which the formulation of each particular problem is guided by the possibility of containing answers of pre-determined exploration paths is quite another matter. In other words, the very act of formulating a question creates the residual category of an answer, and that in turn is probed through well-structured pre-determined paths. These deviate as the quest for answers is infused with yet more questions, and the whole process repeats itself endlessly.

Not that there is such a thing as the answer. There can only be an answer, and another, and another: contingencies all, which may or may not be valid within any particular logical framework, or from any particular perspective. They may not even be mutually consistent. Perversely, in some situations an invalid answer may be more appropriate than a valid one.

The quest to categorize tends to assume that human behaviour fits into boxes with neat and discrete labels. However, these categorical boxes, whether internal and subliminal, or conscious and external, are not truth. They are merely an act of choice; an atomism, imposed by the observer/thinker and restricted because that choice needs to be aligned within the

notational frames and categories whereby the observer operates. Otherwise his own constructions, his own categories cannot be communicated. Once we escape from any notion of truth or validity, then we can see those choices as arising from the purposes and priorities of the observer. Hence, even though it is possible to separate the observer from the observed, such a separation is artificial, lying as it does in the head of a third person doing the separating. Interacting with the world for the discovery of 'truth' unveils the impossibility of separating the structures/frames within a personal delusion from the interpretations made from that delusion. This interdependence merely intensifies the myth of objectivity. But how can there be objectivity when objectivity requires an object, which requires an observer? How can there be anything other than the delusion of objectivity?

Sameness = Similarity?

Each of us sees a different world, albeit with similarities. This book is using the idea of similarity in two different ways here, and that ambiguity can and should be resolved. On the one hand 'I' can consider my delusions as similar to yours. On the other, within 'my' personal delusions 'I' can choose labels that group 'things' together, and which according to 'my' senses are similar. Things appear similar because the result of 'my' sampling of them with 'my' personal delusions throws up very little that is different; differences that 'I' choose to ignore. Whether those things in themselves are similar to one another is quite another matter. However, similarity is not sameness, although it is the human condition to treat similarity 'as if' it is sameness, and then to assume that all comparisons between such sense data choices are *absolute facts*. Italian playwright Luigi Pirandello summed it up well in saying that 'a fact is like a sack. It won't stand up until you put something in it' (Pirandello and Bentley, 1998).

A *fact* is merely an approved communal judgment, positioned within a context. A fact does not exist for any particular 'me' until the 'I' places it among his personal and individual frames, and then delusions. Everything then occurs within the present context. We humans are trapped because the self-evident categories that we choose are the fundamental building blocks of our delusions; they are our way of differentiating meaning and identifying such facts. As the context changes, so does category, and so does meaning. That ever-changing meaning can only ever be uniquely individual; similar, but never the same as meaning inferred by others. And even individual meaning is inconsistent over time and place.

Therefore, even those who share the same(?) social systems do not necessarily share exactly the same(?) perspectives on those systems. A supposedly shared-delusion is actually a private delusion, because it is uniquely interpreted by each individual. Although there is a general cultural commonality of meaning within social groupings, each delusion is truly individual, reflecting how that individual became what he is, not only because of all the groups to which he belongs, but also despite them. Individually, we are what we have become, and what we will become, in the dynamic feedback of both systemic and environmental influences that result from a lifetime of experiences. However, each individual has to cope with multiply overlapping perspectives that need not even be mutually consistent; they certainly aren't rigidly fixed. Naturally the events that 'I' sense in the world are in flux, but more importantly 'I', the sensor, too am in flux.

In creating their individual delusions, most people vaguely follow the agglomerated structures/frames laid down in the past, either directly by interpreting writings and other knowledge artefacts or second-hand via family, friends, fellows and teachers. Mostly the education we get from these role models is in essence the development of personal but socially acceptable shared-delusions. Humanity has no choice in the way we create these stable delusions. We are predisposed to a linear form of atomism in which we create cognitively convincing categories. To do this we separate things from other things; entities are separated by a void, designated, distinguished and hence differentiated. This is the fiction underpinning the edifice of classification, which itself drives the thinking of man, the rational being who 'places his behaviour under the control of abstractions' (Nietzsche and Breazeale, 1999).

Category is not truth, but merely a cognitive fiction: an act of choice. This choice, not necessarily conscious, demands that it is acceptable, appropriate even, to treat similar things as if they are the same, and then to assume that all comparisons between subsequent data choices are absolute facts. Why do we ignore this fundamental absurdity? Because the assumption of *sameness* throws up temporary regularities, nonetheless useful, which can support the decision-making that will guide us through the turbulence of existence. However, every time we conspire with the absurdity of sameness, whenever we compare and in particular measure,¹ we inadvertently scatter a debris of detail all around. For in observing the world out there beyond us, we are squeezing the square pegs of reality into the tidy pre-prepared round holes that are the intellectual abstractions with which we describe it. That debris

is the accumulation of the differences between individual occurrences of items in the external world, and the ideals with which we choose to classify them. Despite what we take to be clarity of thought, we are left obliviously wading in a sea of white noise accumulating from the paradoxes formed when we accept residual categories. These unobserved paradoxes lie on the edge of *Chaos*. Mostly they collapse into an ignorable nothingness, but every so often they conspire in the feedback, and emerge out into the open where they cannot be ignored. They force themselves to our attention, and disrupt our tidy well-made plans.

Nevertheless, the use of names, words, categories are our way of differentiating meaning. As category changes, so does meaning. The first lines of the *Tao Te Ching* sum up our dilemma: ‘the way that can be spoken of is not the constant way; the name that can be named is not the constant way’ (Tzu, 2005). For

man has for long ages believed in the concepts and names of things as in *aeternae veritates* he has appropriated to himself that pride by which he raised himself above the animal: he really thought that in language he possessed knowledge of the world. The sculptor of language was not so modest as to believe that he was only giving things designations, he conceived rather that with words he was expressing supreme knowledge of things (Nietzsche and Hollingdale, 1996).

We would go further than Karl Mannheim, who says that ‘even the categories in which experiences are subsumed, collected, and ordered vary according to the social position of the observer’ (Mannheim, 1985). It is not just the social position of the observer, it is the uniqueness and singularity of the observer and of all the groups to which he belongs, and where he is standing at the moment of observation that delivers these categories.

Logic

Once categories have been launched onto and into the world, they blur the difference between similarity and sameness. Under the umbrella-term of each designated *category*, similar yet different things find shelter. The very act of having created a category for these things creates the delusion that these things, considered at the level of the category, are to be treated as if they are the same thing. Thus the category takes over, and it is treated as the representative abstraction for all things that are similar but not the same.

There is no stopping. We can ask if two particular 'things' are the same, or different, by questioning their representative categories. Truth is now the answer to whether those two 'things' belong to the same category. The door is open for the creation of logic and mathematics.

But it was the prevailing tendency to treat the similar at once as identical, an illogical tendency – for nothing is identical – which first created all the foundations of logic... Logic too depends on presuppositions with which nothing in the real world corresponds, for example on the presupposition that there are identical things, that the same thing is identical at different points of time ...' (Nietzsche and Hollingdale, 1996).

The perspective presented in this book is not saying that the laws of mathematical logic are wrong and have no utility, rather that the utility is restricted by the necessity of creating categories. Of course the logical operators equals ($=$), AND, OR, NOT are valid for the manipulation of our categorical abstractions within the self-reference of mathematics, but without the construction of categories they are intrinsically useless, since their function is to regulate the interaction between categories. It is the abstractions and not the 'things' themselves that are treated as equal (in the case of $=$), as synthesized (AND), as alternated (OR) and as excluded (NOT): as a precondition, all operations act on abstractions that in each case necessarily omit the residues and differences of the operands and the 'things' they represent. What is left un-equal, un-synthesized, un-alternated and un-excluded does not only become an act of choice for particular observers that use the operations differently, but also become an unavoidable necessity in the application of the categories themselves. But how do the operands in such logical operations fit the 'things' into each chosen category, once and for all time? Are we to believe that the interacting complexities of our representations can be reduced to such operations that ultimately ignore the 'debris of detail'? For that is where the trouble with categories lies: '... we see opposites instead of transitions' (Nietzsche and Hollingdale, 1996). We see false opposites, unaware of what Watzlawick calls the 'excluded middle' (Watzlawick, 1983), unaware that there is a continuum, and that we humans attempt to split that continuum between uniquely different and discrete objects. Furthermore, each time we split the world into a logical operand and its complement we have ignored the fallacy of the residual category.

The Absurdity of Numbers: The (F)Laws of Numbers

Once category and logic are in place, then numbers soon raise their ugly heads: counting the elements that conform to a category. Starting with integers, the instrumental fictions of real and complex numbers, rational, irrational, algebraic, even transcendental numbers appear. How peculiar that complex numbers are also known as imaginary numbers, as if all numbers aren't imagined into existence. Then there's the thorny problem of infinity, although we will keep quiet about which of Georg Cantor's multiple infinities we are talking about. Although to the authors, any infinity is absurd: it is an unnatural/artificial concept invented to cover up inconsistencies at the margins of the abstract worlds of mathematics and, by extension, of theoretical physics. Infinity can have no natural real world equivalent since it is beyond counting and bigger than anything we can perceive.

The fallacy of the residual category is immediately apparent with positive integers as they 'tend to infinity'. Let's start with I_{2n} the set of positive integers not greater than $2n$: $\{1, 2, 3, \dots, 2n-1, 2n\}$. This set can be divided into two sets of equal size (n): the even numbers E_{2n} , namely $\{2, 4, \dots, 2n\}$ and the odd O_{2n} : $\{1, 3, \dots, 2n-1\}$. In other words, O_{2n} is the residual category when E_{2n} is taken away from I_{2n} . No problem!

But what happens when n shoots off to the magical realm of the infinity of integers? What happens when considering O , the set of all positive odd numbers, the residual category of E (all the evens), when taken away from I , the set of all positive integers? You would expect E to be the same size as O , since for every even integer x there is an odd integer $x+1$, and vice versa. Since together E and O make up the integers I , there should be twice as many integers as there are even integers. But no. The sets E , O and I are isomorphic: that is for every x in I , there is an even integer $2x$ in E , and an odd integer $2x+1$ in O ; for every x in E there is an x in I , and an $x+1$ in O ; for every x in O there is an x in I , and an $x+1$ in E . So the sets are of the same size.

Of course, the word *size* is the problem here; but the concept of infinity was invented in order to distract attention away from the problems that arise when the notions of addition, multiplication and division break down, and size has no meaning. The weasel words 'tends to infinity' are always used to keep us within the realm where addition and multiplication still work. Because if there is no addition/multiplication, then statements like 'for every integer x there is another $x+1$, or $2x$ ' also have no meaning. Yet in

the above proof of isomorphism we treated them as if they were meaningful. In the shift from finite to infinite, the residual categories of odd and even integers themselves break down.

This disruption was quietly overlooked in the claim to have captured 'all' the integers in the sets O and E , and I . For in these closures of the finite sets E_n , O_n and I_{2n} as n 'tends to infinity' something qualitatively different is going on. Unlike the cases of E , O and I , there are values of x in each of the corresponding finite sets where the values $x+1$ or $2x$ are not members of the set itself.

The term infinity covers a multitude of sins. As long as n is reasonably small, then in principle it is possible to test the above hypotheses empirically, simply by counting. However, an infinite (or even an extremely large) set of things is only countable by inferring a hypothetical superhuman observer who is able to add and multiply things as they 'tend to infinity'. Then the phrase 'the set of all the integers' does not seem problematic; and we can ring-fence infinity in sets E , O and I . There is a difference between, on the one hand, a more pragmatic and empiricist approach limited to finite counting and, on the other, a hypothetical entity like 'infinity' that is mathematically represented as if it is of tangible nature. This produces intrinsic paradoxes that surface as subtle qualitative differences (as in the example above). These difficulties/absurdities should not be underestimated.

We don't have to go as far as infinity to see the problematic link between observation and numbers. The difficulties start with zero (Kaplan, 2000). Roman numerals do not contain a zero²; perhaps those ancients were sensitive to a paradox that we tend to ignore? For zero can be considered in two different ways. On the one hand it can be taken as the representation of the void, the complement of everything, the residual category of the universe ... what is so casually defined as one divided by infinity: although whether division is meaningful here and which of Cantor's infinities is being used are moot points? On the other hand, rather than the presence of nothing, zero can also be defined as the absence of a particular something, which is how it occurs with subtraction: namely the absence of an abstraction, of the very numbers being used to count, which paradoxically include zero. In this latter case there must have been a residual memory of a previous observation of something, a unit, a something that is not there now, so that there can be a zero. 'Nothing can be observed (not even the 'nothing') without drawing a distinction' (Luhmann, 2002b). And yet in our mathematical calculations

we merrily switch between the two meanings without giving the paradox a second thought; which is why zero divided by infinity is undefined, as the expression implies the simultaneous use of both definitions.

Of course, these problems aside, once the benefits of numbers were out of the bag, humanity soon lost sight of the fundamental absurdity: that sameness is equal to similarity. However, we should not forget that counting is problematic in itself: what the authors label *the absurdity of integers/numbers*.

For the invention of the laws of numbers was made on the basis of the error, dominant even from the earliest times, that there are identical things (but in fact nothing is identical with anything else) ... The assumption of plurality always presupposes the existence of something that occurs more than once: but precisely here error already holds sway, here already we are fabricating beings, unities which do not exist (Nietzsche and Hollingdale, 1996).

...[A]nd our fundamental tendency is to assert that the falsest judgments (to which synthetic a priori judgments belong) are the most indispensable to us, that without granting as true the fictions of logic, without measuring reality against the purely invented world of the unconditional and self-identical, without a continual falsification of the world by means of numbers, mankind could not live – that to renounce false judgments would be to renounce life, would be to deny life (Nietzsche, 1990).

Measurement, Statistics and Other Useful Absurdities

Once we have numbers, then we have units, and measurement: measurement of the ‘real world’ by numbers, and the concomitant utility. But we are back with ‘the presupposition that there are identical things, that the same thing is identical at different points of time’ (Nietzsche and Hollingdale, 1996), the idea of ‘sameness’, the seed of equality and enumeration, and thus of logic, the basis of rational thinking. We forget the lessons learned about observation on the edge of *chaos* that is life, or that identifying ‘similarity’ with ‘sameness’ is a trap that leads to inevitable ambiguity and paradox. We must accept ‘sameness’, and hence ‘number’, as a practical choice of representation, but with circumscribed appropriateness; while at the same time we must deny its universal validity when accepting its useful absurdity.

For with category we have set out on the self-referential road: from the natural non-linear world in which we exist to the unnatural linear world of our perceptions. At each stage along this road the utility delivered overcomes all objections concerning absurdity. Eventually the absurdity is absorbed into the background of thought, as being sensible, so that subsequently it is itself used spontaneously in sense-making, rather than being seen as something bizarre. Here paradox lies concealed on the self-referential path between the natural and the unnatural. Only by stepping outside the self-reference (as we recommend in this book) does the absurdity reappear.

The reader may ask at this stage: how do I step outside of my self-referential system? The answer is that this is only possible if the reader observes herself observing. A set of simple questions put to oneself can clarify this point. What distinctions do I use when I observe? What categories do I create? What schemas/frames do I employ when observing? What do I gain, and what do I lose in maintaining these distinctions, these categories and these schemas? And even more importantly, what distinctions can I use differently in my observing?

Does this highly sceptical stance on numbers cause difficulties? Only for those who insist that the logic of false opposites, grounded as it is in 'sameness', must be all-encompassing. There are a number (sic!) of problems with category. Everything that is given the category's label must be treated 'as if' it is identical to the idealized entity that defines the category. Anything that is not in the category is un-similar in all respects to the category, and must be treated as totally different. As long as this doesn't cause a problem, then all is fine. But this is not always the case. For when referring to any 'thing' that is being measured, or is being categorized in any other way, it is not just the particular category that is being actuated, but every aspect of that thing including all its severed structural couplings. Who knows what the consequences will be?

It is possible for an entity to be simultaneously part of two different categories. For example, someone asked to 'toe the company line' (one category) could feel contradictory political, religious, moral and family pressures: so-called lateral loyalties. That creates a serious problem for any observer who identifies any attribute to be simultaneously part of different categories. The observer then has to make a context-sensitive value judgement about the relative merits of each category. Hence, we must recognize that the logic of category is just idiosyncrasy. In analyzing societal problems, mathematics, statistics and the like have become mere

self-indulgent over-sophistication. Mathematics is not universally appropriate. Was it ever? Could it be that some people find mathematics difficult to grasp simply because their personal delusions refuse to indulge this unnatural/artificial linear idiosyncrasy?

What about statistics? Mark Twain was being deluged by a torrent of statistical data, culminating with the rebuff ‘the figures don’t lie’. His devastating retort was: ‘it’s not the figures lying that worry me, it’s the liars figuring’. It’s what all managers do come budget time. But maybe Twain should have been worried by the figures. For perhaps numbers do lie. Well not exactly lie. Nietzsche claimed that numbers are grounded in error, in absurdity, or more specifically they are ‘instrumental fictions’: sometimes useful, but fictions nonetheless.

When it comes to winning an argument, rhetoric is far more powerful than numerical logic. We don’t need numbers to prove that we have won a particular argument. Champions of numbers get very annoyed when they can prove themselves right with their numbers, and yet somehow they still lose the day. After all, the use of numbers for measurement is itself dependent on an intellectual trick that we play on ourselves. That trick, the concept of spurious comparison that pervades all pseudo-scientific thinking, is fundamentally flawed. It is all too easy to forget that numbers are not objective; they are linear and unnatural. They are ‘instrumental fictions’. Numbers are like people; torture them enough and they’ll tell you anything.

Even the so-called experts have come to doubt the validity of statistical methods for predicting the behaviour of complex systems. For example, as little as thirty years ago these experts were claiming that the mean time between failures of nuclear power stations was in the order of tens if not hundreds of thousands of years. The meltdown at Chernobyl in April 1986, which was just the worst in a series of over 150 serious nuclear mishaps occurring over a ten-year period,³ had clearly shown that position to be fallacious.

Rationalism in the Post-modern Era

Unfortunately the numerical methods of science spouted by a management culture dominate all governance, both organizational and national. These methods seem so attractive, yet they are not going to help. Methods and methodologies are mere rituals that evolved to be optimal in the modern age; but will they help us cope in the post-modern? No! It is now quite

clear that our over-use of measurement is merely misplaced ritual, as is computerization, as are command and control systems, as is auditing: output measurement that can be easily outmanoeuvred, as in the off-balance sheet risks that finally brought down Enron, or the mathematically based financial instruments that played such a major part in the sub-prime mortgage debacle and the Credit Crunch. All are rain-dances, self-pretences that we understand our world, and are in control of it.

Many professionals themselves have sensed the inadequacy in much of ritual measurement. Yet still from all sides there are loud calls for rational solutions to the problems facing us, as if there is a single unifying rationality. Everywhere we see the quest for quantified efficiency, where any form of redundancy in the data is viewed as inefficiency that is to be eliminated. Rationalists believe that efficiency is necessary for a well-run organization, and they forget that efficiency is measured in terms of yesterday walking into tomorrow.

This perverse and decadent view of efficiency was anticipated by Northcote Parkinson, when he warned that 'perfection in planning is a symptom of decay' (Parkinson, 1968). Efficiency is bad for business. In Darwinian terms, efficiency optimizes a species to a niche, and when that niche changes, as it must, the species becomes extinct. For redundancy is not waste. It has its uses: helping reinforce or reject values; allowing for human forgetfulness and for social checks and balances; enabling for error tolerance; and giving time to reflect and reconsider. Redundancy creates flexibility/variety needed by the organization to cope with whatever the business environment throws its way. Unfortunately the prevalent distortion of Taylor's scientific management, all too readily pointed at society by its political and commercial leaders, portrays all of these reasons as human faults, to be corrected in the world of virtuous technology. Their *Brave New World* will not be one of ordered, constrained and controlled lives, but a rule-based bureaucratic shambles. The unknown, uncertainty and *Chaos* require that we take a strategic view, one not based on some mythical pro-active mechanistic rule book.

Rationalists want a return to an orthodoxy grounded in engineering principles and the factory metaphor, and to treat society and the economy as if they are machines on a production line. They want to confront what they consider to be the post-modern hysteria brought on by a loss of faith both in the instrumental efficacy of science and technology and in the high priesthood of experts who proselytize that faith. The authors hope to show that this loss of faith in experts is not without merit. Indeed, they very

much agree with Surowiecki and his promotion of the *Wisdom of Crowds* in that in social situations the sensibly aggregated uninfluenced insights of the many usually better expert opinion (Surowiecki, 2004).

Rationalists want society to regain the faith in scientific expertise, and then everything will be back on track. They want our world to be tidy, and to try and banish all the evil spirits by forcing tidiness on it with the magic wand of systematic, yet arbitrary, use of measurement. Rationalists call for such best practice, when best it certainly isn't, as so vividly exposed by the 2008 Credit Crunch.

Best practice would be a mistake, for it is becoming increasingly apparent that the ritual use of conventional methods simply doesn't work in the broader social arena where professionals have to operate. Measurement may make sense for the development of technology and of physical artefacts, but to use it as a tool for social engineering is absurd.

It is crazy to think that the complexity of our world can be captured as a mere collection of numerical data: representations and instances of so-called absolute facts. Each fact really does depend on the context. Yet everywhere there is the folly of forecasting techniques that are merely an assignment of numbers to the future. Such forecasts are a belief that numbers are meaningful in relation to the future, and controlling that future becomes a matter of labelling it with numbers. Wrong! The future is not some smooth trajectory of the past; the discontinuities implicit in change are forever pulling the future away from past trends. Discontinuities mean that the ride of life just isn't that smooth.

Searching for the right numerical label to represent the future is no different to mysticism: it is the modern-day equivalent of reading the runes. As now-sceptical ex-scientists, both authors can still individually recall his disorientation when he first realized that certain, nay most important things couldn't be measured, and that what was being measured could be totally irrelevant. Often, the only reason that something was being measured at all was because it could be measured, and only ritual made that important.

The mere availability of ample data, in both the physical and the social worlds, is enough to generate the rituals themselves; and this sets in train the vicious circle of measurement, production of results and re-measurement.

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