Miracles and Nasty Surprises

Coherence, Emergence, Complexity and Organization

by

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This discovery, indeed, is almost of that kind which I call *Serendipity*, a very expressive word, which, as I have nothing better to tell you, I shall endeavor to explain to you: you will understand it better by the derivation than by the definition. I once read a silly fairy tale, called *the three Princes of Serendip*: as their Highnesses travelled, they were always making discoveries, by accidents and sagacity, of things which they were not in quest of: for instance, one of them discovered that a mule blind of the right eye had travelled the same road lately, because the grass was eaten only on the left side, where it was worse than on the right--now do you understand *Serendipity*? One of the most remarkable instances of this *accidental sagacity* (for you must observe that *no* discovery of a thing you *are* looking for comes under this description) was of my Lord Shaftsbury, who happening to dine at Lord Chancellor Clarendon's, found out the marriage of the Duke of York and Mrs. Hyde, by the respect with which her mother treated her at table. Horace Walpole, 1754

There's absolutely no bubble in technology.
Got me a cs degree, Honor Roll MIT
Moved to Palo Alto, Opportunity Knocked
Thought I had the perfect plan, took the job at webvan
Traded in my twenties for a worthless pile of tech stock
Suffered through the market crash, lost a giant wad of cash
Pink slips, burger flips, would you like some fries?
Happy days are here again, Larry Page Sergey Brin
Time to write a business plan so I can be like those guys!
Here comes another bubble, it's a monster rally all around the valley
First you need a buzzword, then a second and a third
Pick at least two industries you'll revolutionize
Find yourself an engineer, feed him pizza buy him beer
Give him just a fraction of a fraction of the pie
Need a good domain name, must be cheap can't be lame
Something cool like flickr, meebo,wikiyou, mahalo, bebo
Telephone without the "t", digg but with a triple "g"
Make your elevator pitch, code it up and flip the switch
Here comes another bubble, the VC's are backing, baby let's get cracking
Blog, blog, blog it all, blog it if its big or small
Blog at the cineplex, blog while you're having sex
Blog in the locker room, babies blogging in the womb
Blog even if you're wrong, won't you blog about this song?
Launch party, nicely dressed, what's the point sausage fest
Blue shirts, khaki pants, looking like a line of ants
Need to get a facebook page, all these guys are half my age
Twenty nine, past my prime, I feel so behind the times
Here comes another bubble, in a year we swear we'll all be billionaires
Make yourself a million bucks, partly skill, mostly luck
Now you can afford a down payment on a small house
If you want a bigger one, Hillsborough, Atherton
Better hope the same thing happened to your spouse
IPO lucky you, have your cake and eat it too
Private yacht, party jet , why not buy a matching set
Build yourself a rocket ship; blast off on an ego trip
Can this really be the end? Back to work you go again
Here comes another bubble, and when we are gone, this will still go on
And on and on and on and on and on and pop

"Here Comes Another Bubble" The RichterScale, 2007

Introduction

This is a book which can help explain miracles. It can help to explain nasty surprises. It will give you guidance about how and why bad things happen to good people and why seemingly bad people can apparently prosper.

We are not writing about religion. We are not writing about the latest suggestion from some management guru. We make no claims about truth or about having found "the way."

The explanation we offer is nonetheless profound. It has its roots in a critical examination of the role of efficiency in our modern society and how the drive for efficiency has altered our very way of thinking.

Perhaps we lost you with that last sentence. We promise to explain.

Consider, if you will (humor us this is only paragraph five of a two hundred plus page book), the game of golf. On many, if not most, golf courses there exists a hole with a significant water obstacle between the fairway and the green. Golfers expect such holes. They have rules of thumb to guide them as they play. They have anecdotes about the holes and prior play which they learn from. And, America being America, if they are playing on a modern 21st century golf course and driving a modern 21st century golf cart, golfers have the "electronic assistant: available – a "golf computer" which knows each and every hole and can tell the golfer which club to play and how to aim their stroke. These golf computers are the paradigm of efficiency. They eliminate the need for the anecdotes and stories. They eliminate the need for the personal knowledge of each hole which once was offered by your friendly caddy (and for which that caddy could sometimes acquire a rather generous tip).

If the hole is 'average' and the computer has been fed the right information, then the recommendation offered will be generally correct and efficiency will score yet another victory. BUT. Not all golf holes are average. On some the water hazard in question is actually a fairly significant body of water which may physically be fifty to one hundred feet below the level of the fairway and the green (____ is a prominent example). The body of water may have its own weather patterns. The golfer, feeling no wind at his back and seeing no movement of the flag on the green, still has limited information about the weather conditions down below on the lake or river as the case may be. The computer has even less information.

Efficiency in the golf computer comes in the form of an algorithm which performs a few computations and then the machine tells the golfer what "best practice" says about club to use, direction to aim, and how far to attempt the drive. The golfer does as suggested and the ball ends up 25 yards to the left of the green. The golf computer was being coherent. It performed efficiently. But, the mental mindset of efficiency led both the computer and the golfer astray. It turns out that there was a strong wind on the surface of the river which had a profound effect on the trajectory of the ball. If the golfer had had a caddy, the caddy would have gone to look at the river, made some observations about the white caps on the current and of the vegetation bobbing in the wind, and would have suggested how to alter the 'best practice" so as to better fit the then current situation.

Our golfer got a nasty surprise. If the wind had changed course just a little, he might had gotten a miracle instead. (And if that had happened he would have been bragging about the golf computer to everyone he knew.)

The nasty surprise happened because the coherence on which it was based – the unified sense of understanding which allowed the golfer and the computer a sense of confidence with regard to next steps – was faulty. The coherence of the computer was based on averaged best practice (sound familiar) which the golfer applied as if it were a rule not to be tinkered with. Best practice is after all best practice. Efficiency has no room to consider context, history, and situation.

Miracles happen when context history and situation combine in a fortuitous way as one applies some efficiency mindset derived rule. Nasty surprises occur when context history and situation combine in an unfortunate way as one applies some efficiency mindset derived rule. In both cases the coherence which was the basis for the action was itself faulty.

That notion – coherence -- is what this book is about.

Coherence is a simple word with a complex understanding. At its root is the notion of “co” and “here” – two or more items are both present in the same “here” at the same time. When things are coherent, they seem to be of a unity – the two or more items sharing a “here” have something in common which allows for a unity to appear for the participants, the observers, or both.

When coherence is written about or spoke of it usually is done so retrospectively – someone has looked back and determined that the label “coherent” is or was applicable to the situation being so labeled. While the coherence literature is not extensive, it is rather thorough with regard to this ascriptive retrospectively labeled coherence. This book examines coherence from a very different perspective – that of experience.

When we experience coherence we have the confidence of feeling grounded and the certainty which itself promotes a willingness to act. The power of a coherent experience lies in the lack of questioning which it demands and the affordances for further experiences which it offers. Coherence is a valued aspect of situations, concepts, and organizations. That value too is related to the lack of a demand for attention to resolving uncertainty.

Our golfer was making use of rules and labels captured in the algorithm of the golf computer to approach his game. He was making use of retrospective coherence. Now if had had a caddy with local knowledge, the golfer could have supplemented that retrospective coherence with experience. He could have adjusted best practice to local context and situation. He could have made use of the local caddy's knowledge of history.

This is a book about the thought processes we all live with. They were at work in the mind of our golfer. They are at work in your mind now. These thought processes are fundamental to how we each go about dealing with the world in which we find ourselves. They are the processes by which we create,

recognize, assume, and believe in the stability and wholeness of that world. Psychologists refer to these thought processes as “coherence.”

When we perceive the world as coherent, as holding together, as making sense, we have the ability to make that coherence a background condition. We accept the coherence as faith. We act on the belief that it exists. Collective coherence can lead to miracles.

When our perception of coherence is shattered; the world no longer seems to be holding together. Things do not make sense. We are always asking questions and we worry in our inability to find answers in which we can believe. We react to our loss of faith by pulling back to whatever coherence we can find. For some the remaining coherence will be very individual and private. Some will bury themselves in the certainties which are their work. Others will find it in family. Still others in community work and in focusing their thoughts and efforts on the needs of people not themselves.

The coherence of which we are writing can be as simple as the act of falling in love or as complex as the creation of a global economy of derivative trading.

Coherence of this kind is experienced. It is embodied in our lives. We feel it and breathe it.

Computers have a vastly different kind of coherence. To a computer coherence is then degree to which an item s matches a definition or a set of items has observable qualities which match one another. Computer coherence is about measurement.

Miracles and faith give way to nasty surprises and doubt when the measurement based coherence of computers has taken over for the experiential coherence of humans and context changes.

While context remains relatively stable the substitution of finding coherence by measurement instead of experiencing coherence through life can produce great efficiencies. Stable context is the foundation for “best practices.” Stable context is the foundation for the rigid application of rules, for the use of statistical controls, and for the substitution of algorithms for temperamental and oft time emotion influenced human judgments.

If you lived in certain places in America -- in an area of rising home prices during the years 2000-2007, the housing bubble was a miracle. Like any other miracle, it endured due to faith. Faith in the belief that prices would continue to go up. Faith in the belief that there would always be others who would be there to buy. Faith in the belief that the “easy money” which seemed to be available to make housing purchases would continue to be there. Faith in the belief that the economy was strong and fundamentally sound. Faith in the belief that the leaders and decision makers in the housing, banking, construction and related industries knew what they were doing. Faith in the belief that one's elected leaders at all levels of government knew what they were doing.

Faith is a powerful force. Once we accept beliefs as “faith” we tend to not question them. It would be sacrilege and deeply unsettling to attempt to examine and reexamine the basis for our faith. Faith is accepted as a “background condition.” It just is. We incorporate the elements of our faith into the fabric

of lives. We understand the world through the lens of our faith. We go about our daily lives secure in the strength of our belief founded upon faith. Our "modern" world has found great efficiencies in converting faith into rules and algorithms. While they work... miracles can happen.

When faith is called into question, nasty surprises result. Our faith has blinded us to the slow compilation of evidence which may have raised questions about our beliefs. Because our world was in some sense constructed upon the bedrock of our faith, the shaking of that bedrock is in effect a shaking of our world.

In 2008, America questioned the miracle that was the housing "boom" and nasty surprises followed. The boom was seen to be a bubble – a bubble in the process of bursting. Neither business leaders nor politicians seemed to know what to do. They flailed with idea after idea and acted often in vain seemingly just to be observed to be acting and making decisions. The very beliefs on which the faith in the housing boom rested crumbled before our eyes.

Just as this is not a book about golf, this is NOT another book which seeks to explain who did what to whom in creating the financial crisis of 2008-2009.

Our golfer used a computer which substituted for the experientially gained local knowledge of the caddy. The parallels with the financial crisis continue. Part of the housing bubble was fueled by the relaxation of the "know your customer" rule of banking (where a loan officer would not commit to a loan without a coherent belief that customer could repay). This rule was in effect a demand that no loan be made without the experiential knowledge of context, history, and situation to buttress whatever the algorithm might suggest. Efficiencies won the day. The "know your customer rule" was replaced by "instant approval" based on a computer's measurement of data anonymously submitted and seldom subject to verification. The golf computer was now on every bank officer's desk. America's addiction to easy credit was the result.

Then the context changed. The measurements were called into question. And suddenly both kinds of coherence (the measured and the experienced) which underlay the provision of easy credit seemed very shaky. (The wind kicked up from the lake after two of the golfers playing had made perfect drives doing exactly what the golf computer told them.)

Managers are taught much about measured coherence. The power of measured coherence to produce results in a world of fixed contexts drives much of modern business. The road to profit lies in finding efficiencies and in exploiting anomalies found through better data analysis. Managers are taught little to nothing about experienced coherence – they learn that through the school of hard knocks.

We aim to change that – a little. By looking at the relationship between the two kinds of coherence, we hope to illuminate the types of practices which can better prepare one for both miracles and nasty surprises.

Context is everything. Measured coherence demands stability in context. Experienced coherence is the act of finding stability in context. Without a reliance on the former, efficiencies are difficult to create ad exploit. Without an awareness of the latter, opportunities pass us by and crises descend seemingly from nowhere.

Sagacity, preparedness, demands that managers develop a better understanding of experienced coherence.

Thus our book.

The lessons in this book are simple, but their implications are vast. Our modern world tends to operate from a belief that progress, efficiency, and the way forward stem from a mastery of labels and rules. Labels are the names we associate with items, people, groups, situations etc. Rules tell us what to do when we are dealing with something labeled x. Ascribed, measured coherence focuses on how well a given item, person, situation etc. matches the label we have assigned. It also examines how well rule x matches desired outcome y. The underlying assumption is that the pairing of label x and rule x will produce desired outcome y.

In the terms we use in the book, this assumption that label plus rule produces desired outcome is model – a mental model we carry around in our heads about how to deal with the world. Because we use the same model in a variety of situations that reapplied model is known as a homology – a shared sameness.

Our observation is that label based rules are not the only kind of homologies available to us. The traditional craftsman apprentice spends years observing the master at work with two objectives: to gain awareness of the opportunities presented from moment to moment by context and to develop a repertoire of mental models (homologies) about how to exploit those opportunities as they present themselves. Aircraft pilots undergo hundreds if not thousands of hours of simulation training with much the same objectives – though their task is to recognize dangers which may present themselves moment by moment by context and to develop a repertoire of mental models (homologies) about how to react to the dangers as they present themselves. Both the craftsman apprentice and the pilot do not learn their skill from the study of label based rules. Instead they are required to engage with experience and to learn from context.

We cannot articulate an understanding of a shared mental model except via the words and symbols which we use to both tell stories and individually as labels. Knowledge of any particular homology is 'attributed knowledge' --- homologies are only analytically available to us and not directly perceptually available. Individually we may each develop a sense of mental models and when and how to apply them, but until we can articulate that sense or understanding the models remain private and locked in our individual heads.

Our modern sense of efficiency has lead to the presumption that when a label can supplant a story it is more efficient and thus “better.” The problem with that presumption is that the study of labels and

associated rules is devoid of a study of context and the opportunities presented by context. We call those opportunities “affordances” – the then present context affords one the opportunity to do x.

Both the craftsman and the pilot are trained to recognize affordances and to then apply an appropriate homology from their repertoire. One must start with the affordance and then apply the homology. This epistemological problem means that one has to ground one's study of homologies in one's knowledge/observation of affordances. To study homologies devoid of the affordances which allow for them to be acted upon creates the danger of purely rational models divorced from circumstance (the world). Such a study allows for the homologies to characterized and labeled without regard for the affordances which render them applicable. The craftsman’s art and the pilot’s skill somehow become equated with the manager’s mastery of rules and labels. Managers need more than the study of label based rules. Unfortunately, our observation is that such study is the backbone of the managerial education system.

Thus we offer an alternative model which examines the interrelations amongst four ideas:

experienced coherence affordance

attributed coherence homology

you cannot get directly from experience to homology; either you have to abstract experience (attribution) or pass via dealing with world (affordances)

affordance -- concrete possibility, circumstance and co-relationship/action, can lead to experience and can be analyzed as to what sort of homology might be behind it, but it will not go directly to attributed knowledge because affordance is middle in the world and not in a realm of abstract systems.

in experienced coherence there will be the affording that can be studied qua its underlying homology

attributed coherence requires a theoretical homology (generalization) to support it, the problem is to ascertain if the real (affording) really justifies the attribution (ie how does one get back from homology to experience)

Our goal is for you the reader to question the rule based coherence you think you are safe relying upon.

Whenever you look back you can construct explanations and algorithms which allow you attribute coherence to the past. You can always be your own version of the golf cart computer or the computer generated risk profile for a sub-prime mortgage loan.

Experience as it is being experienced is just different. It is contextual, situated, and open to emotion. Experience draws upon that which appears to be available to construct enough confidence to allow for the next action. If all that is available is a rule then that is what will be used. Often this will work fine. Sometimes a miracle occurs. Other times a nasty surprise.

If, however, you begin to question labels categories and rules as being insufficient, and you start to look instead for underlying models, narratives, you can seek out possible alternative contexts, play with them in your minds eye, and develop an experience based coherence as your foundation for action.

It may not be efficient. It may not be characteristic of the data driven computer based algorithmic future we seem to think the 21st century should be. But as our research suggests, it works.

Craftsmen do it. The most senior practitioners do it. Without counting on miracles. And ever prepared for what could be a nasty surprise.