

## SCIENCE IN STORYTELLING

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**What makes a story a story? The paper explores for an answer. The author tries to find out if there are some fundamental principles or science residing underneath. The starting point for this exploration is the year 1642. We are attracted to story inescapably. The attraction comes from such deep levels of mind that it is unaffected by age, education, status and ethnic origin. It is something fundamental. It is universal. We are born with an incurable addiction to story and we die with it.**

### INTRODUCTION

**S**tory is one of the simplest forms of art enjoyed by one and all. Irrespective of the mode of presentation, such as, written, verbal, or audiovisual, it attracts people. As the story begins, we seem to get into a different world and live with the characters in their land and society. We share their joy, excitement and concern. At the end we come out of that world unscathed, but we do bring something from there—some memories, some feelings and maybe some relationships with the characters. A journey like this into a different world and coming back with some experience give rise to a sense of pleasure deep in our mind. It is deep, indeed, because attraction to story is universal. Be it a two year old or somebody in nineties, a highly educated scholar or an illiterate person, the appeal of stories remains the same.

What, then, is a story? Looking for an answer, we find that there is something nebulous about it. A story is a narration but all narrations are certainly not stories. A story has a setting, a few characters and some events but any collection

of these does not necessarily make a story. Stories are often based on imagination but again any figment of imagination is not a story.

### SYSTEMS AND WORLD OF CHAOS

1642 is a very significant year in the history of science. Galileo died and Newton was born this year. They, in fact, laid the foundation of modern science. Both of them are accredited with the discovery of some of the basic laws of nature. e.g. gravitation. They strongly believed that if all such laws were known then using mathematics as a tool and with the knowledge of the present, one could predict what was going to happen. The scientific community accepted this philosophy and it does work in general. For example, certain natural events like lunar or solar eclipses are predicted years in advance. Machines are built using scientific laws and they work, as engineers want them to. However, this is not true universally.

Towards the beginning of the twentieth century, Henri Poincare, a well-known mathematician, questioned this philosophy. He studied a few systems and came to some startling conclusions.

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In the language of science and engineering, a system means a set of interacting bodies or parts. The solar system, for example, has the sun, moon, planets, etc. Ecological system of an island would be another common example. It consists of the animals, birds and insects in the island and the marine creatures in the surrounding sea. When a stimulus is applied to a system it responds. The way it responds depends on how various components in the system react to the portions of the stimulus reaching them. The components behave differently. In addition, since the parts are interconnected, often the reaction in a downstream component influences the upstream ones. This is known as “feedback”. The nature of feedback may not be in proportion to the intensity of stimulation. It may be highly magnified or attenuated to negligible intensities. This is called “non-linear feedback”.

It is easy to appreciate that a system is in fact a “complex whole” and with such nonlinear feedback loops operating inside, it behaves in a very complicated way. Poincare showed that in a system with such feedback loops, the situation is indeed immensely complex. At times it becomes impossible to tell what is going to happen next. The objects do follow the laws of nature individually but the mutual interactions and influences on one another (i.e. feedback) can make the system extremely sensitive to the slightest variations. No prediction is possible.

### **CHAOS IN NATURE**

In 1963, Lorenz, a researcher working in weather forecasting, demonstrated this phenomenon clearly. This gave rise to a concept called ‘Chaos Theory’ which finds wide

applications in all branches of science, right from highly objective areas of physics or chemistry to subjective realms of sociology.

Take the case of a small river, shallow and placid. A black round rock protrudes up in the middle. Water flows past the stone gently. A bird flies over and a feather from its plume falls on the river. The feather floats smoothly like a boat round the rock. Someone picks it up and puts it back into the water again. It moves along the stream in almost the same way. The flow of water is thus “predictable”. Scientists, using their equipment, can show that the speed of flowing water at any point and time can be calculated beforehand.

Then comes the tropical monsoon. Torrential rain. The river now looks angry with swollen and roaring currents. Water is flowing in shorals and eddies round the rock. A feather is dropped. It gets caught into an eddy, circles round for sometimes, drowns and then seen floating up at distance. Another one is dropped. This one follows a different path. It sinks immediately, then rises, again sinks. The flow of water is now beyond predication. Even the scientists are unable to make any guess. In their language, the speed has crossed a limit and “chaos” has set in.

Water in a glass bowl is being heated in the kitchen. A tea-leaf has fallen into it. As the water in the bottom gets warmer, it moves up. The colder water, being heavier, comes down. The leaf follows the pattern and moves up and down in a circles, in a predictable way. As the heat picks up, everything is upset! the leaf is seen to move in a crazy way, jerky and random. Not possible to guess where it goes the next

moment. This is not at all a large-sized thing like a swollen river. It is a simple and common sight in the kitchen. Chaos exists there also.

Water appears to be undivided and wholesome but in reality it is not so. It has many layers in it. The layers are made up of a smaller parts of water. These are interconnected. It is a “complex whole”, or a system. If one part in a layer starts moving because of some external force, it tries to drag others with it. Movement sets in other parts, which influences the one, which moved initially. A very complex affair! In fact it is a “System with Feedback”. Beyond certain limits, these systems do not remain predictable. They behave chaotically.

Water and air are similar from the scientists' viewpoint. They flow from one place to other ; pressure and heat influence them. Chaos frequently sets in there. Weather often ignores all attempted scientific forecasts because of this.

Human mind is, in a sense, like water. There are many layers such as conscious, subconscious and unconscious. Maybe there are many more strata within each of these. There are some identifiable divisions like emotion-driven mind and rational mind. They are all interconnected. Mathematics is something for the rational mind. If a student fails to do the first three sums while taking a school exam, he becomes afraid of not clearing the test. This emotional disturbance affects his rational thinking and he tends to lose his cool—a manifestation of interconnection of emotional and rational functions of mind. There is no barometer or thermometer to measure the pressure or temperature in somebody's mind, but it is certain

that human mind, psychologically, behaves like a system with complicated feedback taking place within all the time.

It is a bit too much to expect that the mathematical theory of systems and chaos would be directly applied to explain human psychology but there is a striking similarity. The similarity is often astonishing. There is, it appears, reason to believe that like systems with non-linear feedback loops, human mind, under stress, can lose predictability and drift into the world of chaos.

The scientists learnt about chaos only a few decades back. The poets and authors had the knowledge of chaos residing deep into human minds for thousands of years. Let's talk about that prince from northern India who lived some four thousand years ago. He was well known all over the country for his knowledge, wisdom and rational thinking. He was drawn into a game of gambling with dice by a bunch of “not-so-good-people” who were his rivals. He accepted the challenge and as the game progressed he started losing. Under the stress of humiliation and perhaps some unfounded confidence on luck, his mind crossed the limit, the limit that separates normal behavior and unpredictability. His mind entered the world of chaos. He started behaving like an insane. He put his kingdom to stake and lost. Then he staked his family and lastly his wife. He lost them too. From this point, strange and exciting incidences began which culminated in a great war. This is the central theme of the great Indian epic *Mahabharata*. Assume that the prince did not lose his cool during the game of dice. He sensed trouble and left. The war leading to huge

loss of lives and property would have been averted, but surely this powerful story, which is alive for thousands of years among millions of people, would not have been created!

Moving out from that arena by four thousand years in time and some five thousand miles westward we come to one Mr. Charles Strickland, a stock market broker in the city of London. A quiet and soft-spoken man in his forties, Charles had a modest income but lived happily with his wife and son. How about joining a painting course? He thought. He did have some talent for painting in his school days. He joined the class. Passion for painting and suppressed talent broke loose. His mind crossed the limit. He was thrown into the world of unpredictability. He soon became a different person. He left his family, job, home, everything. Tried settling in Paris to get into the profession of painting. Nothing really clicked. He lost everything and years later somebody found him in the island of Tahiti with a native woman in a small hut. He had leprosy and was totally blind. Still he had paint and brush in his hand. He kept on painting on the walls, restless and full of passion! This is the story in Somerset Maugham's popular novel "The Moon and Sixpence". Another example of passing into the world of chaos and going through unpredictable twists and turns.

As long as a system is not stressed to the limit, it can absorb perturbations. It swings and sways, but regains stability after some time and comes back to normal behavior. It's like throwing a stone in still water. The ripples fade out with time. Human mind behaves the same way. However, beyond the limit, it's different. As the system experiences increasing levels of stress, it

crossed a sort of "first limit". It faces two or more but countable number of possibilities. It opts for one of these, the choice being totally uncertain. No anticipation works. It is a new way; it does not come back to its earlier normal state. With stress going up further, the final limit is reached. This is the edge of chaos. Infinite possibilities open up. It can go in any direction. It is highly unstable and totally unpredictable.

The story maker has to compose as setting for his work. A background, a few characters with their interrelations and some insight into the minds of the characters basically constitute the setting. This is very much like defining a system. In course of the story, this fictional system is put under stress and the outcome narrated.

A single mind has enough complexity in it. A single mind itself is a system and can be the subject of a fiction. What happens when two or more people come within the sphere of interaction? Then two or more systems will combine to form a more complex system. Such as, a man and a woman, two women and a man, a family, a society, etc. The behavior of such systems is essentially the same. Stable—first limit with a few possibilities—final limit and chaos.

Lets take an example of a fictional system (ficsys in short) comprising of a man and a woman. We all know them. Over the last few centuries they have kept the audience spellbound all across the globe. They are Macbeth and Lady Macbeth. The witches foretold that Macbeth was going to be the king. This resulted in tremendous anxiety and stress to the Macbeths

who had nurtured high ambition deep in their mind for all these years. The king trusted the Macbeths fully. He was Heir guest that night. Lady Macbeth was insisting again and again that this was the opportunity. The only task was to kill the king who was sleeping peacefully. Macbeth was unable do decide. The friction of ambition against ethics and opportunity created enough heat to take the ficsys to the verge of the first limit. The couple was about to lose stability. A few possibilities appeared. Would they kill the king? If so, then who would take the knife? Macbeth or Lady Macbeth herself? The point of bifurcation was reached. At midnight, the system crossed this point, i.e. the first limit. Macbeth killed the king who was in deep slumber. This event, in turn, raised the heat and pressure of the ficsys several folds. The ficsys rapidly went past the final limit and landed into the world of chaos with infinite number of bizarre turns and swings. Shakespeare did let his story drift in the world of chaos. The life of the Macbeths went astray. They never came back to normalcy.

We are perhaps now able to see the general anatomy of story. The tale spinners compose a ficsys with the character(s) and keep raising the stress. Stress is not necessarily something harmful, profound love or pleasure also lead to stress and may take the system beyond limits. From the ancient writers to shakespeare to Maugham, all followed the same model.

However, it is not true that as the ficsys crosses the limit something major, like war or assassination or some such big events have to happen. Human Mind has many dimensions in it. It has many sides, many aspects. Mind

responds to many kinds of stimuli. One can see it coming to the verge and crossing the boundary under relatively simple conditions and with simple conditions and with simple outcomes. These could be simple to the society or people around but not to the person in question nor to the story maker who can turn it into a great piece of literature.

Radha was a young woman from a village. She was from a very poor family and she lost her husband soon after marriage. Her in-laws did not accept her and she was staying with her father. She went to her in-laws with her younger brother to get back a piece of gold ornament, which belonged to her. Mother-in-law refused to part with that and literally drove her out. Disappointed and dejected, she was coming back. It was noon. Weather was hot and sultry. The train was halting at a station. They were very hungry but she had only nine paises (lowest value coin) with her. Nothing was available for that sum. Even a small cup of tea was selling for four paises. On the other platform an express train arrived. The first class compartment was in front of them. Through the glass windows, Radha could see the passengers. Well-dressed men and women were chatting, laughing and enjoying their lunch. Radha kept looking at them. She almost got into a trance. Life can be so beautiful! She suddenly took out four coins from her nine-paise kitty and said "Lets get a cup of tea, what's so great about four paise, I will spend these now". (From a short story by an Indian author).

It is not rational to spend four coins out of nine for the luxury of taking tea. In fact, this decision did not come from her normal thinking;

this came flying from the world of unpredictability. The strain of her own hopelessness and the sight of the cheerful passengers in the express train took her mind into the world of unpredictability. There is an unmistakable signature of chaos. That is why in spite of a very ordinary setting and simple outcome it makes a powerful story.

### STRUCTURES AND STYLES

The basic structure or anatomy of story is like a tree. Imagine an insect climbing the tree. At lower heights, whatever way it moves, it will be found on the main shaft. This is the stable region. Then it reaches the first bifurcation. What happens now? It can take any of the branches, the region of unpredictable but countable possibilities. At higher altitudes, there are innumerable twigs and leaves. It can go anywhere. Unpredictable. Countless possibilities Chaos.

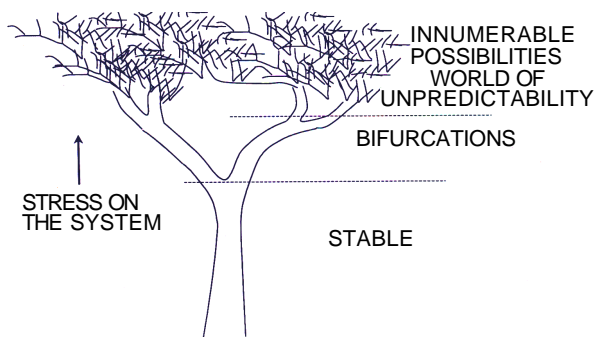


Fig-1. Structure of story

The storyteller's job is to make that insect climb. As it comes to bifurcations, we wait curiously. Which way, now? In "character driven" stories, the author makes his protagonist reach the bifurcations and higher. He then lets his character meander and drift in the unpredictable world without being much conscious of what happens finally.

In the so-called "plot-driven" stories, the writer decides before hand which of the branch or twig he would choose. He often brings in a thread, shows it to the reader and then sets it aside. He then carefully picks up the pre-decided path out of many possibilities and uncovers the thread, which had been kept aside earlier. There is either a great consonance or a total contrast or a surprising relationship. The reader gets a kind of pleasure to note this match or mismatch. This is a common style of story making and examples galore.

At times the author likes to dramatize. He may compose two isolated ficsys and stress them to limits. He would then carefully pick up two possibilities, which he can unite. An example : Two brothers were separated in their early childhood. They grew up in two different places not knowing each other. Lots of things happened and finally they fell in love with two girls. "By coincidence" they met each other in the same church where both came for wedding on the same day at the same time!

Some people like it while some call it melodrama. Nevertheless, this style is found all across either in a crude way as in the example above or in a subtle way. It is not always necessary to make the ficsys cross limits. If it is brought close to the point of bifurcation or to the edge of the final limit, the reader gets a feel of unanticipated new happenings, new possibilities. Story is successfully created.

A young government officer was posted in a remote town. There was an ancient palace on the bank of a river. It was uninhabited and most of it was in dilapidated condition. One evening,

driven by curiosity he entered the palace. To his dismay he found that there were people inside. Though he could not see them, he felt their presence. In the mean time the weather became bad, it started raining accompanied by gusty winds. So he had to stay there. He heard music and sensed that someone was dancing. Then he heard a female voice, sobbing in grief. In fact, the history of the palace was being enacted before him. He was surprised and shocked. Then came a bearded old man who shouted, "Nothing is real, nothing is real!" He was a person, real and alive, but completely insane. He used to roam about in the palace. Perhaps he also experienced the same and became insane. Horrified and dismayed, the young man ran away and somehow rushed into the house of a person he knew. Completely drenched and totally out-of-wits, he asked "Tell me, what are all these, tell me why are they still there!"

The story more or less ends here. This is a successful ghost story written by Tagore. Note that the young man's mind has been stressed to the edge of chaos. He is very close to losing his mental equilibrium. And that's it. The reader possibly spreads his own imagination into the world of unpredictability and enjoys.

When the story maker is at work, he is like a scientist in a laboratory. He composes his setting with characters and keeps on injecting them with various doses of love, lust, pleasure, grief, awe, etc. to take them to the limit. Some authors try a variation from this common recipe. The text reads like a simple narration, often too realistic and natural to be recognized as a story. But the author puts into it very subtle observations and comments. A sensitive and

intelligent reader can pick up the hints. He gets dragged into the setting unknowingly making him a part of the fictions composed by the author. Nothing really happens in the story, but the reader's mind is brought to the edge or even made to cross the limit. He may get a feel of some social injustice he never had thought before. He might enjoy a glimpse of a new angle to life or of a new way of seeing the nature.

Mr. Mayhew was a successful lawyer in Detroit. At thirty-five he decided to quit his profession and settle down in Italy where he purchased a house. It was a picturesque place overlooking the Bay of Naples. He was thoroughly enjoying himself. He got interested in the local Greek-Roman history collecting relics and historical information around that area. Fourteen years later, when he was forty-nine, he thought that he should now sit down with all his notes and write an authentic book on the subject. But he could not do it because he died.

Only three lines are left from this three-page short story. Could you see semblance of a story anywhere? Except for the out-of-the-way decision to settle in Italy, there isn't any.

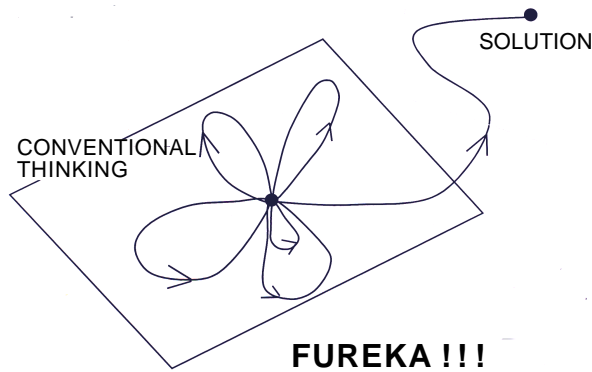
Now the author, Somerset Maugham says : "And yet to me his life was a success.... He did what he wanted, and died when his goal was in sight and never knew the bitterness of an end achieved."

The reader, in all probability, never has this angle of thought. His mind, surprised by the novelty, moves to the edge. He may try revisiting his own life and experience of success and failure in a new light which was hitherto not on

his plane of thinking. He enjoys it as a story. What happens if the reader is not sensitive to these finer aspects of life? Those last two lines do not influence his mind! He shuts the book out of frustration and say that “Is this a story or what, these modern authors... they only know what they write!” The story remained invisible to him because nowhere the edge was reached nor the limit was crossed.

**EUREKA**

We used the phrase “plane of thinking” just now. It is in fact conventional thinking centered around a problem or issue. A stressed mind sometimes flies away from the plane and discovers new ideas or directions. The process is similar to a system crossing its limits of normal behavior. Arthur Koestler in his well-known book “The Act of Creation” cited the example of Archimedes and concluded this to be the secret of creativity.



**Fig-2.** Concept of 'Eureka'

He called this process “Bisociation”. Later, others interpreted the phenomenon in terms of the concept of chaos<sup>3</sup>.

We do not want to go into this theory of creativity but it is interesting to see that this is a widely practiced means of story making. The

king wanted to know if his crown was made of pure gold. Archimedes was summoned and given the task. He was to find the purity without damaging the piece. It was a challenge to Archimedes, a challenge to his knowledge and intellect. At the same time, failure could lead to serious consequences because the order came from the king. Archimedes was under stress, which kept on increasing as the deadline came nearer. His mind was circling around the conventional point on a conventional plane. Under stress, his mind crossed the boundary and flew off to a different plane at a different location where the solution existed. He solved the problem unexpectedly while taking his bath. Overflowing water from bathtub and purity of gold are generally not connectable. But to Archimedes, the sight of overflowing water provided a very subtle clue. “Bisociation” is the process, says Koestler. It is system behavior under stress involving chaos, think many others.

In stories involving solution of crime or mystery, this style is often seen. The detective with a bunch of information in his mind keeps thinking. He feels the pressure of time. If he cannot nab the killer now, more crimes could be committed. Quite a bit of professional challenge is also involved. He feels stressed. He is suddenly able to connect a trifle (thought to be so) clue and reaches the solution in a flash. This is the “Eureka” model of tale spinning.

What happens if this stress and subsequent flying off to another plane are not there? While a passenger ship was sailing in the sea a diamond ring was stolen. A detective and his assistant were on board. Other than the passengers, three men, Smith, Robinson and

Jones who were cleaner, waiter and the thief (NOT respectively), were there. Also aboard were three tourists who had the same names : a Mr. Jones, a Mr. Robinson and a Mr. Smith. The assistant collected following information :

Mr. Robinson lived in Detroit. The cleaner lived exactly halfway between Chicago and Detroit. Mr. Jones' earning was \$40,000 a year. The cleaner's nearest neighbor, one of the tourists, earned exactly three times as the cleaner. Smith used to play chess with the waiter. The tourist with the same name as the cleaner lived in Chicago. Who was the thief? Though it appears to be too complicated a situation one can proceed in logical steps to arrive at the answer. Smith was the thief. The detective solved the case. There was no doubt that the detective was clever. Doubt, however, remained somewhere else. Is this a story? We have to think twice, maybe thrice. It really does not qualify as a story. At the most it can be described as a good puzzle or interesting brainteaser.

There is a setting, a crime and an intelligent solution. Then way isn't it a story?

The detective's mind never flew off to another plane away from conventional logic. The spirit of Eureka is not seen anywhere in the episode. Therefore this is not a story.

Origin of humor, Koestler concluded, is a similar process. A strange link between thoughts on two different planes may result into earth-shattering discovery or make us laugh! Joke or humorous story has something to do with shifting of planes of reference. People with sense of humor are generally more creative. What kind of stress is at play when someone cracks a joke is, however, not clear. Why do people laugh is a topic of serious research!

***Do events or happenings make a story?***

A young man is out into the sea in his fishing boat. A storm sets in all on a sudden. He is fighting for life. His mother, now in their house in a coastal village, is praying to God for safe return of his son. Here, the ficsys is formed around the mother and her son. The event "storm" has imposed considerable stress in it. What's going to happen now? The reader is curious—a story is in the making.

Then there was another storm. There wasn't any body in the sea. But an abandoned boat was drifting along. The boat once belonged to a king who lived some hundred years ago. It had been drifting on aimlessly for a long time. Today is perhaps its last and final day. If it sinks, the last relic of the kingdom will disappear forever.

Though there is no character as such, there is an observer. And that's the ficsys. It is under stress. Stress is increasing as the sea becomes rough and choppy. It is at the edge. If the boat sinks, the observer will have a feeling of grief or loss or something else, not really known till the narrator tells us. Therefore, a story is brewing. We can feel it.

Latitude : 17.4, Longitude : 88, GM Time : 16-52, Wind speed : 130 miles per hour. Height of waves : 20 feet (maximum).

This precise report of a sea storm is not giving rise to a story. Even by doubling the speed of wind and height of waves, this narration cannot be shaped into a story. There is no composed system or ficsys. No stress, no limit, no edge, no unpredictability and so no story either.

If an event influences a ficsys, then only it contributes to the flow of the story. As the ficsys comes to the edge, the path it takes can result into other events. In long stories, authors often make a chain reaction to happen i.e. an event, which came as a result, is made to influence the ficsys in turn.

***Which is more important, event or ficsys?***

“The Snow Storm” is a short story by Alexander Pushkin (1799-1837), the Russian writer. It goes like this : A=A girl in her teens. B=A young soldier, bachelor. He has come to the place where A lives to spend his vacation. Love. A's parents are totally against the marriage. A runs away to marry B in a church, which is a bit far from her village. B also sets off for the church from a different place the same night. There was a fierce snow-storm and B loses his way. C is another young soldier. He lands up into the same church, having lost his way during the snow-storm. The people around mistake him for the bridegroom. It is getting late so they somehow get him married with the girl who has been waiting. When the girl happens to see him, she faints. This is not the man she loves! She goes back and almost loses her mental balance. Finally, however, she accepts that unknown soldier as her husband.

The narration of the snowstorm is liked by many, particularly by those from warm countries who have no experience of it. But if we turn this chilly snowstorm blowing at minus sixty to a blistering hot desert storm at hundred twenty degrees, the story does not really change. It will not change as long as the influence of the event is the same on the ficsys. One can safely use flood or riot or some such events keeping the basic story unaffected.

But try introducing a new character D who is the wife of that second soldier, the story changes. D will react to all that happens in the church and thus it amounts to a change in the ficsys. The story flows in another direction ignoring the fierce snowstrom!

It is quite clear that events do shape up a story but the role of the ficsys is more significant and important.

***Dynamics of ficsys—what happens if it is Ignored?*** In science, dynamics of a system means how the system responds to external stimuli. When and under what levels of stress it would cease to behave in a normal way is also system dynamics. In the context of fictional systems too, the term seems to be meaningful.

If the author does not care about the dynamics of ficsys, i.e. does not follow the concept of stress build up and reaching the limit, the readers may not sue him in the court of law, but there remains a serious deficiency in the story. Lets take a look on how does it happen.

As the author composes the setting of the story, the reader's mind starts working with it. Setting is in fact the ficsys the author wants to compose. The reader's mind tries to understand the dynamics of the ficsys. And it does so. This is an internal yet spontaneous process. The reader may not even be aware that his mind has already mapped how long the ficsys will absorb stress without losing stability, where is the first limit and where comes the edge of chaos.

What is experience of life? It is not knowledge of science, history or religion. It is the ability to understand dynamics of complex systems at play all around—complex systems in individuals, families, groups, societies. The reader extends the same ability to gauge the ficsys.

We often hear such comments on stories or novels as “Oh! it’s just incredible. Married for twenty years, how can that guy leave his wife and children so quickly! Can’t digest this stuff!”

Why is it “incredible”? The reader never asked the author not to imagine things. Neither did he ask him to write only hard facts or true case histories.

It appears incredible because the author has not followed the basic rules for his ficsys. Maybe he made something unpredictable happen when the ficsys was not stressed enough. The ficsys was nowhere near its limits. The reader does not accept flouting the dynamics of ficsys.

In case the reader or listener does not have “experience”, say a child, then the tolerance is somewhat more but the principle applies. In fairy tales often we find paragraphs that go like this :

And then the prince got into the deep wood. It was very very thick and dense. The prince kept on going and going but the end was not in sight. It was becoming dark. The sun would go down the horizon soon and wild animals come out. He was afraid that he had lost his way. He tried to climb a tree.

Lets make a summary of it : In the wood, the prince tried climbing a tree. The child will not like this. There is no stretching of the ficsys. The kid will not enjoy even if a big surprise is struck at this point. Disregard of the dynamics of ficsys, in such cases, causes some kind of a feeling of “storylessness” in children.

The scientists have studied chaos in nature. The natural systems often reach the region of

unpredictability. At such stages, possibilities are countless but not anything and everything. Even the stern mathematicians say that there is an overall order and beauty in the world of chaos.

In ficsys, the same concept works. The story maker does get the liberty to choose from innumerable possibilities but like nature he must believe in an overall order and beauty. The realization that there is beauty in chaotic world is probably the password to artistic success.

### CONCLUDING REMARKS

The behavior of fictional systems and complex systems encountered in real life are fundamentally the same. As long as we can anticipate what is going to happen, we take it as something normal. With stress setting in, limit is reached when one can only predict that something unpredictable is going to happen. This common behavior is the link between the world of fiction or story and reality. Most probably, this is the only common link.

Human mind has the ability of learning dynamics of complex systems on its own. The neurons pick up information from the senses viz. sight, sound, touch, etc. and keep training the network in the brain. It is a black box. We ourselves cannot decipher what is up there. With more and more information, the network is enriched and understanding becomes better. That is the secret of experience. An experienced person deals with a complex situation in a better way.

The basic model of complex systems must be there in human minds in some form or other. It only gets enriched and developed with time.

Carl Yung (1875-1961), the noted psychologist talked about some “Archetypes” or universal images stored in human mind. He used the concept to explain of myths in human societies because myths across the world have a common pattern. It is quite likely that the basic model of complex systems with their proneness to reach the edge of unpredictability is also imprinted deep in human mind, maybe in the unconscious layers. Human mind yearns for reaching the edge and enjoys the pleasure of freedom from predictability. We cannot taste this in our everyday life. Story provides us with easy opportunity to reach the edge.

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### DO YOU KNOW?

- Q 8. Can excercises actually reverse effects of aging?
- Q 9. Is the dolphin a fish?

