A New Theory of Story

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Why would the scientific community be interested in a theory of story? If stories are merely works of some chaotic creative muse, then there would be little to gain by a scientific examination of their workings. But as unpredictable as stories seem to be, there is some underlying meaning that seems to transcend culture, time and even language itself. That such a universal form of communication should exist and yet be inexplicable and without pattern flies in the face common sense. What is this pattern at the heart of stories that all human beings seem innately capable of grasping?

Is it possible that the mechanisms underlying the vast body of material that we call stories (books, movies, songs, plays) might mirror processes in the physical universe, perhaps processes in the mind itself? Could it be that the patterns found in chaos theory, physics, psychology, and even the structure of DNA are reflected in the structure and dynamics of stories? Could an author write better, more unique work if she or he understood those patterns? And what might these patterns imply for other sciences, such as artificial intelligence?

The answers are surprising. For the past 13 years, we have been engaged in an exploration of the mechanism of stories, which has resulted in a unique set of tools and concepts in what amounts to a "unified field theory" of story. This theory has enabled us to create a software program that can perform a task previously never achievable: given a small amount of data and essentially no database, the theory will predict what events will happen in virtually any functional story.

The theory of Dramatica was not born out of analysis of other narrative theories, nor out of exhaustive analysis and cataloging of stories, but rather from asking several simple questions:

- Is there a mathematical relationship among Characters, Theme and Plot?
- How do dramatic potentials relate to the order of events?
- Are Acts and Scenes more than just simple dramatic divisions?
- Why can't Characters just solve their problems at the beginning of the story?

In the first part of this two-part article, we will introduce a number of novel concepts that form the basis of the Dramatica theory. Then, we will show how these concepts are interwoven into a dynamic structure.

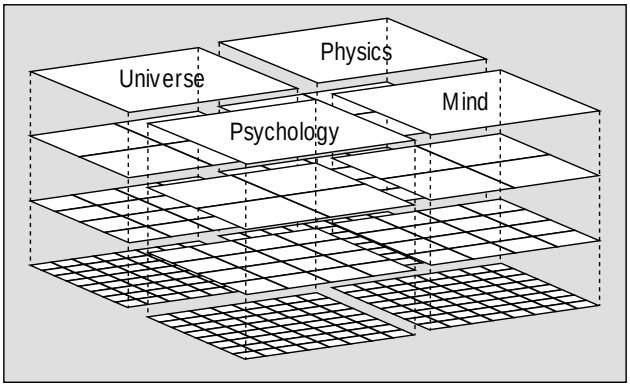


figure 1

Finally, we will explain how the manipulation of this structure yields useful data that can bring both understanding and prediction to the story creation process.

In the second part, we will explain the scientific basis for these manipulations, how our theory links them to an understanding of the human mind, and what this theory may mean for other sciences searching for missing pieces to their own puzzles.

Ever since stories were first told, theorists have searched for patterns that would explain dramatic function and assist authors in creating sound structures. While countless theories of structural analysis exist (Deconstruction, Semiotics, Reception Theory, etc.) most, if not all of these are inadequate for creation. Because stories are told as progressions, most attempts to explore their workings have focused on *linear* causal relationships.

We took a different approach. We reasoned that once a story has been told, it is no longer appreciated simply as a progression. Rather, a story is similar to a television, scanning its electron gun across the screen. Slowly, through linear progression an image is built up. By the time the entire frame has been scanned a picture has been created that is greater than the sum of its parts. Similarly, the progression of a story, though linear in nature, ultimately constructs a greater meaning that is appreciated as a whole.

To perceive the essence of the "big picture", one must separate Story**form** from Story**telling**. *Storyform* is the unique arrangement of structure and dynamics that creates the dramatics of each story. *Storytelling* is the way that arrangement is illustrated. As an example, we might imagine an author wishing to communicate the abandonment of *morality* in favor of *self-interest*. To illustrate this concept the author might describe someone taking candy from a baby or drinking the last water in a lost desert patrol. The essential concept of morality vs. self-interest is part of the storyform. Either of these

scenarios specifically used to make the point would be the storytelling.

Since there are many ways to illustrate a given concept, previous attempts to discover the inner workings of story have often gone awry by incorporating storytelling as part of the theory. When both storyform and storytelling are combined, the nature of the problem becomes too nonspecific and the number of possible solutions becomes infinite. These combinations create the enormous variety seen in stories, but also make the task of discovering the underlying patterns very difficult. By limiting our study to the essential storyform devoid of storytelling, the number of variables is greatly reduced, allowing for a single solution for any given storyform that satisfies all of the parameters of a dramatic equation.

When we strip away the storytelling from the story we find an extremely ordered structure driven by very specific dynamics that we call the storyform. A visualization of the structure alone resembles a four dimensional Rubik's cube (*figure 1*). The model is four dimensional rather than three because it describes not only the linear progression of the story but the overall pattern it creates as well. Time is incorporated into the structure, becoming one of the elements in the storyform to be manipulated like any other. The model's components are finite in number and movable according to dynamic parameters. This allows for an amazing number of combinations to be created from a relatively small quantity of building blocks.

The structure consists of *Dramatic Units* that represent the processes of the story as objects. This has the effect of quantifying the interactions of a story into functions. Each dramatic unit is a function. To produce a complete storyform, each of these functions must act upon the audience in the proper place and time. It is the relationship between these Dramatic Units that varies from story to story, much as a Rubik's Cube can be turned into many different arrangements, yet still maintain its identity as a cube. Changing the position of the Dramatic Units shuffles their position in the fourth dimensional time/space of the model so that the order of events is intimately connected to the nature of the message being sent by the author. For example, Doing something so one can Obtain something creates completely different dramatic potentials than Obtaining something so one can Do something.

When we began looking for patterns, we discovered that those elusive relationships of dramatics that everyone feels yet are so hard to define are fractal in nature. In fact, the dramatic processes of a storyform are grouped in fractal dimensions. Once realized, the fractal patterns of the storyform clarified the meaning and purpose of Acts, Scenes, Characters, Themes and Plot, and showed how all of these dramatic concepts grow from *mathematical relationships* between the Dramatic Units.

There are four vertical levels in the structural model representing four fractal dimensions that group "families" of similar Dramatic Units. The levels tend to differentiate Character, Theme, Plot, and Perspective (which is somewhat akin to Genre). This does not mean, for example, that Character is confined to a specific level (this would be too linear) but rather that the audience's

Four "Families" of Dramatic Units

Sample quads from each of four "families" of Dramatic Units are shown at left. Each of these Units is a dramatic function that will occur in every story. The semantic terms shown for each unit describe the "meaning" of that function as interpreted by an audience. The semantic is not the function, only a description of the nature of the function.

figure 2a

Proaction	Inaction
Protection	Reaction

Elements

figure 2b

Instinct	Senses
Interpre-tation	Condi-tioning

Variations

figure 2c

Past	Progress
Future	Present

Types

figure 2d

Universe	Physics
Psychology	Mind

Domains

Elements are frequently the focus of character attributes. The quad in *figure 2a*, contains Dramatic units from a family called elements; in this case, Proaction, Reaction, Inaction, and Protection. We can "feel" the similarity and relationship of these four elements, just as an author would in creating a story, and an audience would in experiencing a story.

In *figure 2b*, we see four Units in another family called Variations, which are descriptive of Theme. Instinct, Conditioning, Senses and Interpretation have the same relationship among them as the elements in *figure 2a*. This is a result of the fractal nature of the structure, which applies the same equation to all quad formations in the model. We note, however, that the family feel of these four units is distinctly different than that of the elements.

Types are involved insetting the boundaries of the plot. *Figure 2c* shows a quad a types containing the Dramatic Units Past, Present, Future, and Progress. Once again, the same internal relationship exists and the nature of the family is wholly different than the other two families.

Finally, *figure 2d* examines a quad of Domains. Universe, Mind, Physics and Psychology describe the area in which the stories problem is centered. As Dramatic Units, they reflect the quad equation. As a family they carry their own unique nature.

appreciation of dramatic functions perceived as character traits and relationships tends to focus at a particular level.

Each level is constructed of Quads, which are square frameworks containing four Dramatic Units. Quads are not just place holders. In fact, the quad form is a physical representation of the most basic equation of Dramatica. The math of this equation has been translated into a quad pattern or matrix. Each position in the matrix represents a *variable* in the equation. In a sense, the Dramatic Units can be seen as dramatic functions that are treated as objects rather than processes so that they may be easily manipulated by an author. Similarly, the quad form represents an equation seen as a matrix.

To clarify, Dramatic Functions are concepts that impart understanding to an audience. For example, the concept of *Morality* is common to all times and cultures. Although the specific meaning or definition of Morality will vary considerably from culture to culture, the concept of Morality itself is universal. When an author communicates essential concepts, it is done in the specific vernacular of their culture. By separating storyform from storytelling, cultural definitions are removed from the concept creating a content independent function.

In a storyform's neutral position, all dramatic functions are balanced by their position in the matrix. As a result, "like" functions are grouped together so that quads describe "families" of Dramatic Units. Each of the families has a distinct "feel" to it, so that although each Dramatic Unit in a family is unique, there are certain traits that describe the family as a whole, effectively creating a Periodic Table of Story Elements. *Figure 2* illustrates the similarities in the nature of Dramatic Units *within* each family and the differences *between* the families.

But structure is only half the picture. Just as a Rubik's cube would sit in its initial form unless some outside force acted to twist it, the storyform model sits at rest and without dramatic potential until dynamics act upon it. By themselves, neither the structure nor dynamics of story create dramatic tension. The motive force of story is the dissonance *between* structure and dynamics, which is created by specific dramatic choices made by an author.

The dynamics are represented in another matrix of choices containing a number of mutually exclusive dramatic intents. An example is whether a character should ultimately decide they have been wrong in their story-long approach and must change or should hold on to their resolve and remain steadfast. Additional dynamic choices determine whether the decision to change or remain steadfast leads to the character's ultimate success or failure in their endeavor, whether that is truly good or bad in the grand scheme of things, and more (*figure 3*).

Figure 3a — Character Dynamics

RESOLVE: Change or Steadfast

Which best describes what the Main Character decides?

A) To Change

B) To Remain Steadfast

Explanation: At the moment of truth, every Main Character must determine whether to hold on to their resolve or to change in the hope of succeeding. **Dramatica Usage:** The selection of Change or Steadfast has wide ranging effects on the dynamics of the story. Such things as the relationship between the Objective and Subjective story lines and the order of exploration of the thematic points is adjusted in the Dramatica model to create and support a feeling that the Main Character either must change or must remain steadfast.

DIRECTION: Stop or Start

Which best describes how the Main Character needs to grow?

A) Stop doing or being something

B) Start doing or being something

Explanation: Whether or not a Main Character eventually changes their nature or remains steadfast, they will still grow over the course of the story, as they develop new skills and understanding . Sometimes a Main Character will grow to realize they must START using a new technique to solve the problem. Other times they grow to realize they must STOP using an old, inappropriate one. Its really a matter of where the focus is placed. If you want to focus on the Main Character growing until they learn to use a new technique, choose START. If you want the Main Character to grow to realize they must discard an old, inappropriate technique, choose STOP. **Dramatica Usage:** A story has both a problem and its related solution. By choosing Start or Stop, you tell Dramatica to shift the focus of the story to one over the other. This is accomplished by controlling the nature of the Character's focus in relationship to the focus of the Story and also by setting the relationship between theme and plot.

NATURE: Do-er or Be-er

Which best describes the Main Character's approach?

A) A Do-er

B) A Be-er

Explanation: In the attempt to solve problems, all Main Characters will take actions and make decisions over the course of the story. However, some Main Characters prefer to take action first, and only try to figure a way around the problem if action fails. We call this kind of Main Character a "Do-er". The other kind of Main Character prefers to figure a way out of the problem first, and only take action if decision fails. We call this kind of Main Character a "Be-er". **Dramatica Usage:** The Main Character's affect on the story is both one of rearranging the dramatic potentials of the story, and also one of reordering the sequence of dramatic events. By choosing Do-er or Be-er you instruct Dramatica to establish one method as the Main Characters intent and the other as the result of her efforts.

SEX: Male or Female

What is the Main Character's Mental Sex?

A) Male

B) Female

Explanation: Every Main Character has a Mental Sex. Even if the Main Character is physically sexless, such as a tree or a rock, It must possess a female or male mind. All minds evaluate their environments in terms of both space and time. A primary difference between male and female minds is which is evaluated first. This does not prevent either mind from looking at any issue from both perspectives, but does affect the order in which they are considered. **Dramatica Usage:** All minds evaluate in terms of arrangement and in terms of sequence. By selecting female or male, you instruct Dramatica to give the Main Character a preference as to which kind of evaluation carries more weight.

There are 256 Dramatic Units in the storyform. Each is actually a different function having a unique meaning to and effect upon an audience. So, once every Dramatic Unit is placed in one of the four positions in each of the quads that represent variables in the storyform's equation, values have been assigned to the entire fractal nature of the model creating a unique storyform. When an author makes dynamic choices for her or his story it rearranges the position of the Dramatic Units within affected quads. Quads are also rearranged within each fractal dimension. We call this process *encoding*. Encoding creates dramatic potentials within the structure, as the balanced fractals are thrown out of balance.

The meaning of a story derives not just from the dramatic potentials that exist, but the unique way in which they interact as they seek to regain equilibrium. As an audience interprets the progression of a story over time, each Dramatic Unit comes into conjunction with many others, creating dramatic tension that rises and falls over the course of the story. Sometimes dramatic potentials combine to create a greater overall potential. Other times they might cancel out, eliminating potential entirely. If we were to plot a graph of the interactions between Dramatic Units over time, we would find them to be wave forms. When all of the Dramatic Units in the entire storyform synthesize, it forms a complex wave form that describes the rise and fall of dramatic tensions. As with all wave forms, a synthesis creates peaks and troughs, harmonics and standing waves.

This is why the "big picture" is greater than the sum of its parts. At times in the progression of the story, one can isolate the "voices" of single Dramatic Units. At other times, one perceives chords, discord, and complex patterns that carry complex meaning.

Having briefly described the *structure* of the storyform model, we can now describe the *dynamics* of the storyform and then show how they work together to create that "big picture".

The first step in appreciating the effect of dynamics on the storyform is to identify which parts of the storyform can be manipulated and how. Looking more closely at a single generic quad, we can see four ways to appreciate its flexibility (*figures 4 & 5*). Each area of flexibility has the potential to be moved by dynamics. Dynamics act upon the structure to reposition Dramatic Units so that they no longer balance overall, but create an inequity within the storyform. Depending upon which dynamic is at work and where it is applied, any Dramatic Unit in the structure can be moved. This does not mean it WILL be moved, simply that it may be. At the beginning of a story, the audience does not know which pieces the author has moved. Essentially, they do not know where the solution to the story's problem lies. In fact, it may be difficult to

figure 3b — Plot Dynamics

WORK: Action or Decision

Which best describes the feel of the story?

A) Action oriented

B) Decision oriented

Explanation: A story might lean toward action, or focus on deliberation (decision). This is independent of the nature of the Main Character. For example, in an action story, the Main Character may be more of a deliberator than a person of action. Therefore, it is important for an author to separate the nature of the Main Character from that of the story as a whole. **Dramatica Usage:** Does Action precipitate Decisions, or do Decisions precipitate Action. Since a story has both, it is really a question of which came first: chicken or egg? By selecting one over the other, you instruct Dramatica to establish a causal order between the Action line and the Decision line.

LIMIT: Timelock or Optionlock

What is the Main Character limited by?

A) A Time-lock

B) An Option-lock

Explanation: Every story would go on forever unless the Main Character reached a point where he was forced by circumstance to make a decision to change or remain steadfast in a "leap of faith". To reach this point, the Main Character must "run out of something". In a Time-lock, the Main Character runs out of time. In a Space-lock, the Main Character runs out of options. **Dramatica Usage:** A dramatic structure has both spatial and temporal frameworks adjusting themselves in arrangement or sequence appropriate to the author's message during the course of the story. Consistently throughout the story either a change in arrangement will force a change in sequence or a change in sequence will force a change in arrangement of dramatic potentials. Which one causes the other is controlled by the choice of Timelock or Optionlock.

OUTCOME: Success or Failure

Does the Main Character?

A) Succeed

B) Fail

Explanation: Success or Failure is determined by whether or not the Main Character achieves their original purpose in regard to the story problem. **Dramatica Usage:** Achieving something requires accomplishing the right steps in the right order to get from where the Main Character starts to where she wants to be. When you choose success or failure, Dramatica alters the kind of steps the Main Character will need to take, and determines the appropriate order to bring them to the desired outcome.

JUDGMENT: Good or Bad

What is the Main Character's ultimate success or failure shown to be?

A) Good

B) Bad

Explanation: A Main Character's success is not always a good thing in context of the "big picture". For example, an evil Main Character might succeed, yet this might be shown to be bad. Similarly, a Main Character might fail to accomplish something that would truly have been detrimental to themselves or others, and that might be shown to be good. **Dramatica Usage:** Because success & failure are measurements of how well specific requirements have been met, they are by nature Objective. In contrast, Good and Bad are Subjective value judgments based on an appreciation of the results of success or failure. When you select Good or Bad, Dramatica adjusts the "phasing" between the Objective and Subjective storylines to create an interference pattern that support the appropriate value judgment.

even locate the problem. To find both problem and solution, the progression of a story over time sequentially explores the model. This is what determines the plot order of events which slowly builds up a full understanding of which pieces have been shifted out of place and where they ended up.

The way the model is explored is by measuring quads using each of the three kinds of pairs. The process of measuring a quad three ways "triangulates" on the suspected meaning of how that quad is arranged internally, and the fourth appreciation provides the context of the quad as a whole in the overall storyform. There are several ways to create an order of events by scanning the storyform by pairs. Some of these make the outline of the big picture visible at the very beginning, then spend the rest of the progression filling in details until all is known. Other approaches start with the detail, then build outward to the big picture. In any case, only when the story is over does the audience have all the pieces necessary to know what it means on a grand scale.

So far, we have described that the dramatic choices made by an author determine how dramatic units are to be moved, but we have not yet described how it is determined which dramatic units are going to be affected. To link both structure and dynamics, the author selects the nature of the problem by "zeroing in" on it through a number of choices. One way to appreciate this concept is to start with a quad at the top level (Domain) and work down through the other three levels to the bottom of the structure.

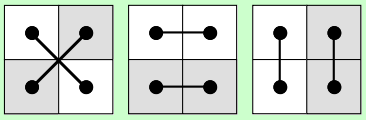


figure 4

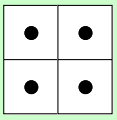


figure 5

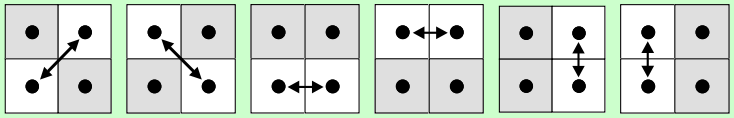
A	B
C	D

figure 6

Each quad groups four dramatic units which describe a single dramatic concept in terms of its Mass/ Resistance, Energy/Potential, Space/Power, and Current/Time. Dramatic inequities, which upset the balance of the quad can be created and measured by examining the items of the quad in pairs. There are three kinds of pair relationships that exist within a quad: diagonal, horizontal and vertical (*figure 4)*. Each represents a different perspective on the story's problem. In a three act structure, one perspective will dominate each act.

Since the dramatic units in the model represent processes seen as objects, the pairs exist in the model as "frozen" functions. They are dynamics that have not yet been applied. Dramatic made by the author determine which functions will be applied where in the structural model.

7a



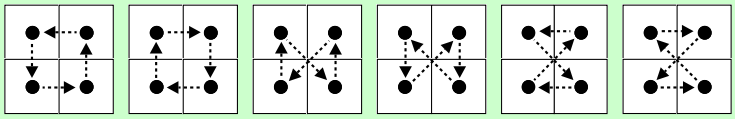
The actual effect of the three kinds of pairs can be seen above. For convenience, we have arbitrarily labeled the dramatic units in the quad as A, B, C, and D. When a pair is used to create dramatic inequity, the two affected dramatic units in the quad exchange position within the matrix in a process called "flipping". The different effect of each pair on the arrangement of units within the quad is illustrated in *figure 7b*.

7b

A	C	D	B	A	B	B	A	A	D	C	B
B	D	C	A	D	C	C	D	C	B	A	D

By continuing to exist within the quad, yet not in the at rest arrangement, the balance of the quad as a whole is maintained, even though its internal dynamics have become dysfunctional. Among many other things, this process describes how a character in a story can see themselves as being correct, even though the audience appreciates that the character is actually the cause of the story's problem.

8a



"Flipping" of pairs describes only the spatial view of the dimensions of a storyform. The temporal view affects the model in a process called "rotating". As with Flips there are three patterns, each having two directions. Each of the rotational patterns is a closed system that moves the dramatic units about the quad like pearls on a string (*figure 8a*). Based on an author's dramatic choices, different rotational patterns will be applied to different quads in the structural model.

8b

B	D	C	A	C	D	D	C	B	C	D	A
A	C	D	B	B	A	A	B	D	A	B	C

The effect on a quad of rotating can be seen above (*figure 8b*). In each example, the content and therefore the balance of the quad as a whole is maintained. However, the sequence of the dramatic units becomes dysfunctional. There is an old phrase, "Pillage THEN burn!", that infers the problems that might arise if a series gets out of sequence.

The quad of Domains consists of Universe, Physics, Mind, and Psychology. Each Domain describes an area in which the problem of the story seems to center. A problem in the Universe Domain would involve a situation, which is a *state* in the environment. A problem in the Physics Domain would concern an activity, which is a *process* in the environment. Mind Domain describes problems concerning a fixed attitude, or *state* of mind.

The Psychology Domain contains problems with a manner of thinking, which is a *process* of the mind. As an example of how a the story's problem is selected, an author might choose Physics as the Domain for the particular story they are creating. (*Figure 9*)

Based on this decision, the author then moves down to the next fractal level (Types) just below Physics and find its quad to consist of Understanding, Doing, Learning and Obtaining. Our author might choose Obtaining as the Type of activity revolving around the story's problem. Next she or he looks one level below Obtaining (the Variation Level) and finds a quad containing Approach, Self-Interest, Attitude, and Morality. She or he selects Morality as the Variation on her or his theme, then looks below to the last fractal level (Elements) and find the quad of Faith, Conscience, Disbelief, and Temptation. Her or his decision is that the essential problem of this particular story will be Temptation. By dropping through the levels, she or he has increased her or his specificity of the nature of the problem until arriving at its elemental nature.

Once an author has decided upon a specific element as the center of the story's problem, it becomes the "lynch pin" for all of the story's dynamics. This *Critical Element* is the nodal point of the storyform: the single unit around which all of the story's dissonance is built. All of the dynamics can now be applied to the structure in reference to that point. If one were to keep all dynamic choices the same but merely select a different critical element, the resulting storyform could have an entirely different meaning. However, since the structure is fractal in nature, sometimes a shift in position of the choice of critical element can result in huge differences in meaning, yet other times, huge differences in critical element position might have little effect other than nuance.

One of the benefits of incorporating time in the model is that an author can predict with certainty the overall impact of selecting different critical elements without having to develop the entire plot to see where it leads. This is possible because of the horizontal and vertical relationships in the structure as described in *figure 10*. When the author's dynamic choices are ultimately applied to the structure causing movement, higher quads may "pull" lower quads with them as they move, encoding a specific dramatic tension by "shuffling" the levels. The string of structural choices that brought us from Physics Domain through

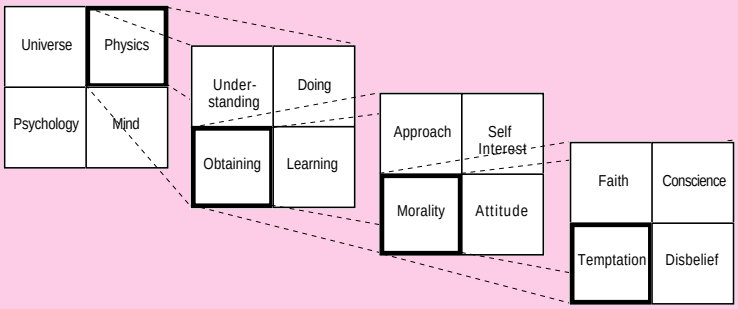


figure 9

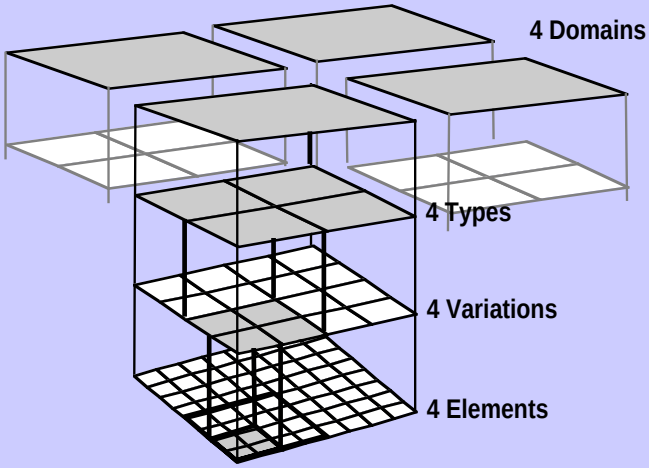


figure 10

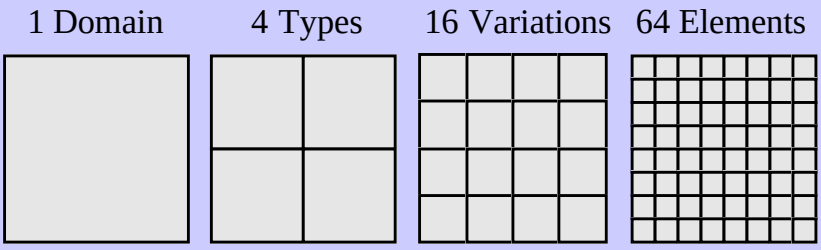


figure 10a

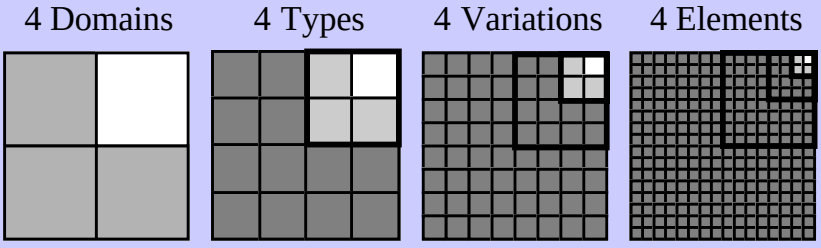


figure 10b

In the structural model, the relationship between the horizontal and vertical fractals is a relative one (*figure 10*). If horizontal size is held constant, complexity increases as we decend through the vertical levels of dramatic units. (*figure 10a*). If complexity is held constant, horizontal size diminishes as we decend through the vertical levels of dramatic units (*figure 10b*). In terms of story, one axis controls the creation of a problem, the other determines its solution.

Obtaining Type and Morality Variation to Temptation Element might be broken and twisted once Dynamics are applied to the model, causing a rift between spatial and temporal continuity.

This schism between space and time is due to two different kinds of dynamics that are applied to the storyform. The first, "flipping" the orientation of one pair in reference to the other, has a *spatial* effect upon the dramatic potentials (*figures 7a & 7b*

temporal
effect upon the order of events (*figures 8a & 8b*).

The effect of these dynamics on the message of the story can be appreciated by labeling each dramatic unit as a Potential, Resistance, Current, or Outcome (Power) abbreviated, PRCO. The progression from one Dramatic Unit to another is seen by labeling the Dramatic Units as 1,2,3, and 4. At rest, the unformed model positions these spatial and temporal dynamics within each quad as indicated in *figures 11a & 11b*. When the Units within quads are flipped and rotated by Dynamic choices, PRCO and 1234 may be dragged along different paths. This can put them out of phase with one another, as indicated in *figures 11c & 11d*, forming the essential dissonance encoding of the storyform.

As an example, the quad illustrated in *figure 11d* indicates that the unit to be explored in Act one is the one in the upper left hand corner of the quad, and should be described as a Resistance. In this case, the story would open by describing the subject of the Act in terms of its ability to stand fast. According to the example, Act two would introduce a Potential for change. Act three would examine the Outcome or power that would be generated by the interaction of the Resistance and the Potential. Act four, would portray the interaction itself (Current). This is quite different from a story that begins with a Potential, followed by the introduction of a Resistance to that Potential, continues with their interaction (Current) and ends with Outcome (Power).

In every quad at every level, the dissonance between the spatial PRCO and the temporal 1234 encodes the specific meaning of the author's intent through imposition of dynamics upon the structure. This same dissonance between space and time clearly shows why story theorists have argued over Three Act VS Four Act structures. *Figure 12* illustrates how the concepts of beginning, middle and end are actually the *valleys* between four points in the story. When hearing a story being related, an audience does not know what direction the story will take. The future is dark, since the element of time is what scans the electron gun from our earlier analogy. They see the story in three dimensions. But as the linear progression of the story moves from the future into the past, it builds up an appreciation containing time as well: a four dimensional storyform. While appreciating the progression of a story, one tends to experience it in three Acts. When examining the overall storyform, all four dimensions become apparent and one can more readily appreciate it in four acts.

A storyform has meaning in terms of both its spatial and temporal components. Being of a fractal nature, these two appreciations carry over to every quad in the model. When appreciating the model spatially, a quad can be seen as an electrical circuit. The four dramatic units in a quad represent the Potential, Resistance, Current and Power (or Outcome) of the circuit (*figure 11a*). These terms serve to describe how a particular dramatic will be appreciated by an audience.

figure #11w

figure #11x

figure #11y

figure #11z

For example in a story about gun control, if the dramatic unit Morality were a Resistance as in *figure 9x* it might be illustrated by an author as the effort to keep guns in the hands of the populace as a guard against government tyranny. However, if Morality were a Current (*figure 11y*), it might describe the endeavor to change policy so that handguns are banned in order to protect society from criminals.

Morality, in the structure, does not necessarily mean "good" in the religious sense, but rather that the concern is the benefit of others over self. This claim can be taken by both sides in an argument, but conflict will be created if one side is being Resistive in their Morality and the other side acts as a flow or Current in theirs.

In contrast, when the temporal components of a storyform are examined, a sequence is perceived within each quad. The four dramatic units in the quad will occur over the course of the story in a particular order and can be labeled as 1, 2, 3, and 4 (*figure 11b*). In our spatial example, we illustrated Morality from the quad of Morality, Self-Interest, Attitude, and Approach. In the same gun control story mentioned above, each of four acts would illustrate one of these dramatic units. For example, in *figure 11z*, Act one would examine the Moral stance of each side of the issue, whereas Act two would deal with the Approach each side takes. In another storyform (*figure 11w*), Act one would look at the Attitudes of those involved, then examine their Moral stance in Act two.

In an "at rest" position in the storyform (*figure 11c*), the temporal and spatial components of a quad are matched in the same position in every quad of the model. But time and space are controlled by different dynamics. Therefore, as an author makes dramatic choices, the PRCP and 1234 in various quads will be thrown "out of phase" with each other (*figure 11d*). It is this "friction" between the two that creates the dissonance which encodes the author's intent into the storyform and allows for full variety of meaning we perceive in stories.

In a sense, experiencing the progression of the story is a subjective view, whereas observing the big picture after all the information is available is an objective view (*figures 13a & 13b*). In fact, the concept of a story having two vantage points clarifies many of the relationships between audience and story. One way to appreciate the difference between Subjective and Objective perspectives is to imagine each story as a battle. The Subjective view of the battle, the one that speaks to our emotions, puts us down in the trenches in the middle of the action. This is the realm of the Main Character and works to develop our empathy for her or his. The battle is also observed by a General on the hill, who, although concerned with the outcome, is not actually involved. This more dispassionate perspective is the Objective View. It is the dissonance between the Main Character's perspective and the Objective Reality provided by the author that carries the message of the story.

This dissonance is created in the following manner. Either the Subjective or Objective perspective will serve as the "measuring stick" for the audience, becoming the carrier wave or reference signal. A Subjective measuring stick sides with the Main Character and indicates they must hold on to their resolve. An Objective measuring stick sides with the universe at large, indicating the character should learn they are in error and change. Whichever is selected as the "proper" perspective functions much like the reference exposure directly from a laser to a holographic plate. All that is explored in the story will be judged against this constant.

The "improper" perspective "bounces off" the dissonance between structure and dynamics, and is reflected back to the audience, creating an "interference pattern" in their minds that is decoded as dramatic tension. This focuses the tension on "nodal points" in the storyform that give us our concepts of Character, Theme, Plot, and Perspective.

It is the holographic nature of the model that creates both particle and wave characteristics in a storyform. The particle nature of the storyform derives from the dramatic potentials of the big picture by compressing the element of time into the structural model so that the structure is rigid and unmoving. The wave nature of the storyform derives from the change in potentials in a storyform over the course of being played out over time as seen in the dynamic model. Hence, for different purposes, we may choose to appreciate the storyform as made of particles or made of waves.

In a relativistic sense, we are dealing with four items here: the structure of the model, the dynamics of the model, the effect of the dynamics upon the structure, and

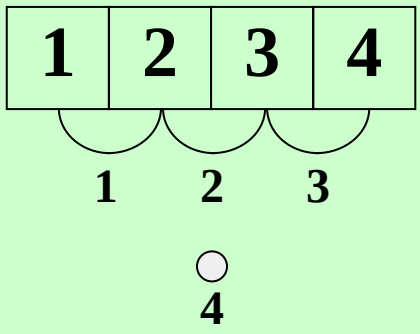


figure #12

There are four distinct dramatic positions within a storyform. Position #1 is the Setup, where the focus of the storyform is shown. Position #2, Inequity, describes the extent of the problem of the storyform. Position #3 is Conflict, wherein the direction of the interaction between Setup and Inequity is illustrated. Position #4 is Conclusion, where the solution of the problem is examined. When all four positions are related to an audience, the meaning of the overall storyform can be appreciated.

When one looks at the spatial relationship of the four positions, a four act structure is perceived. However, as the story is told, the four positions are expressed to an audience over time. As a result, an audience tends to concentrate on the progression of the story, becoming a participant by adopting position #4 and arriving at conclusions. From this perspective one sees the "in-betweens" which creates a three act appreciation in terms of a beginning, middle and end.

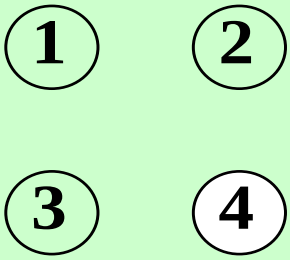


figure 13a

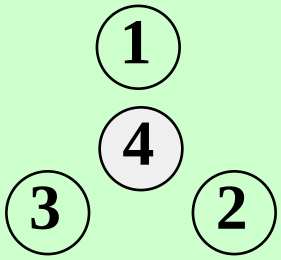


figure 13b

The coexistence of a three and four act appreciation is intimately related to the Objective and Subjective perspectives in a storyform. When a storyform is seen Objectively, the observer stands outside of the model, viewing all four dimensions as in *figure 11a*. However, when the observer stands in the shoes of the Main Character, they become participants in the storyform thereby viewing the story Subjectively as in *figure 11b*.

the effect of the structure upon the dynamics. This view is not unlike seeing structure as the Mass of a storyform, dynamics as the Energy, the effect of dynamics upon structure as the model's particulate arrangement in Space, and the effect of the structure upon dynamics as the wave form of the Temporal progression.

The effect of dynamics upon structure is not a simple causal relationship. Sometimes a small shift in structural arrangement can create an enormous shift in an audience's appreciation of dramatic meaning. Other times a small shift in arrangement may create a small or even no shift in appreciation at all. Conversely, large shifts in the structural model can also run the whole range of effects upon audience appreciations from none to substantial. Linear equations are inadequate to fully describe what is going on.

Since the structure of the storyform is fractal, the effect of dynamics on the structure can be appreciated in terms of non-linear equations. However, when considering the structure's effect on dynamics, time is included as part of the storyform which becomes a static system best appreciated in relativistic equations. The pattern the dynamics take is not fractal, as fractals describe the *spatial* record of the interaction of order and chaos. Instead, we need a matrix that describes the *temporal* record of the interaction of order with chaos. We coined the term *frictal* (a blending of Friction and Fraction) to describe the pattern of the storyform's dissonance — see *figure 14*.

From the non-linear equations and fractals we derive prediction of what the sequence of dramatics of a story should be. Using Frictals, we developed equations or relativity that derived the understanding of what the dynamic dissonance of a story means. This allowed us to locate scores of the most traditional and familiar dramatic concepts on the model. We also discovered many other dramatic appreciations that heretofore had never been considered in terms of their relationship to story.

One of the concepts these new *appreciations* led to was an understanding that the Main Character of a story does not have to be the Protagonist. A Character is Main because the audience looks through their eyes, whereas a Protagonist is the prime mover in the Objective realm of the story.

In terms of realms, other appreciations see one of the classes in the storyform structure as housing the nature of the Main Character. Another class will contain aspects of the character who is the Main Character's chief obstacle in their Subjective journey. We call this character the Obstacle Character, and often, the Obstacle Character is not the Antagonist. A third class contains the storyline of the Subjective story view. The fourth holds the storyline of the Objective story view.

ALTERNATE FIGURE 15

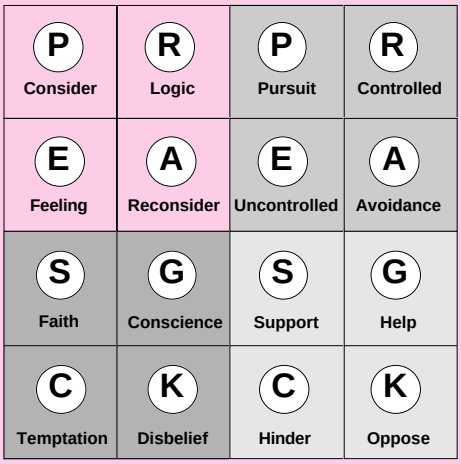


figure 16

A set of sixteen motivation elements or *characteristics* and archetypal assignments. The complete chess set of 64 elements is partitioned into four sets of 16, each set consistutes the appropriate elements that describe objective character motivations, methodologies, means of evaluation, and purposes. Assigning a set of 16 elements as motivations (etc.) is determined by dynamic choices made by an author. Objective characters are built by assembling a group of elements together that remain consistent throughout a particular story. Pictured above are the motivations for the eight archetypal characters.

Since fractal and frictal patterns repeat from dimension to dimension, each class is something of a microcosm of the storyform as a whole. It is like clipping a piece off the corner of a hologram and still being able to get a full view of the object recorded (encoded). The only information lost are some of the points of view one can take to look at the object. Similarly, when we concentrate on a single class, we get all the "harmonics" that resonate in the storyform, but cannot look at them in all contexts. So, a Main Character that ends up in the Physics Domain will be seen in a substantially different light than one in the Mind Domain, though their internal dynamics might be identical.

"Partitioning" the holographic storyform is the nature of every quad in the structure. This means that concepts such as Acts, Sequences, Scenes, and Events are very

real, but do not reside in any one spot. For example, a four act appreciation can be seen in any quad at any level. If one is aware of how to appreciate the dramatic meaning of a given quad, one can follow the 1234 pattern and learn the act order progression of that particular dramatic concept. As a result, a four act appreciation is very specific and can be easily seen anywhere in the model. This makes the nature of a four act structure useful in analyzing the dynamics of given quads. However, there are so many quads that it is impossible to consciously consider all of them simultaneously. Rather, they are intuitively felt by an author in the process of writing.

Fractal partitioning divides dramatics into definitive units such as the levels of Domain, Type, Variation and Element. In contrast, Frictal partitioning creates appreciations that are more like bands in a spectrum. In a spectrum, one can easily point to Red or Blue, yet it is very difficult to say exactly where Red becomes Violet or Blue becomes Green. Similarly, Frictal appreciations of Perspective, Plot, Theme, and Character blend gradually, one into another. When Frictals and Fractals intersect, they create *tendencies* that cause the audience's appreciation of dynamics to gravitate toward specific structural levels. This is what attaches Perspective to Domain, Plot to Type, Theme to Variation, and Character to Element.

As an example of how Frictals and Fractals intersect to create meaning, the Objective Characters (those involved in the Objective storyline) tend to be seen at the Element level of the Objective Storyline realm. At that level there are sixty-four Dramatic Units called elements, divided into four groups of 16. The four groups represent the Motivations, Methodologies, Means of Evaluation (measuring sticks), and Purposes of the Objective Characters (*figure 15*). Each Objective Character is built by assembling a group of elements together that remains consistent throughout a particular story. All sixty-four elements in the level must be assigned to characters in order to represent all aspects of that part of the storyform. This makes sure that all the information needed for this part of the holographic partition is encoded.

Of all possible assignments of elements to characters, there is one that is akin to an alignment of the planets. A similar arrangement of elements is assigned to each character. Each arrangement is balanced in both frictal and fractal dimensions so that the sixty four elements are divided into eight groups of eight elements each. When we examine each of these groups we find they describe the Archetypal Protagonist, Antagonist, Sidekick, Skeptic, Reason, Emotion, and Guardian characters. This accounts for only seven characters. The content of the eigth arrangement describes an archetype often seen in stories, but never before identified. We named this character the Contagonist (*figure 16*).

The archetypal arrangement of character elements is very simple, yet just as effective as more complex characters as long as it accounts for the full compliment of sixty-four elements and adheres to the dynamic guidelines determined by the author's choices.

How structural and dynamic choices interact

Making the dynamic choices of "Do-er or Be-er" and "Stop or Start", plus the selection of the Objective Story Domain will dictate what your Main Character Domain will be.

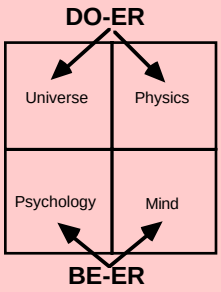


figure a

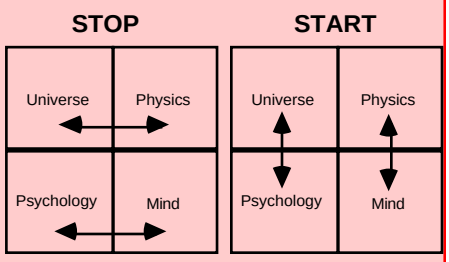


figure b

Choosing Do-er or Be-er determines which companion pair of domains in which the main character will be found (*figure a*). As a do-er, the main character will be in either Universe or Physics. As a be-er, the main character will be in either Mind or Psychology.

Choosing Stop or Start determines the relationship of the main character's domain to that of the objective story domain (*figure b*). In a stop story, the two domains will have a companion relationship. In a start story, the two domains will have a dependent relationship

For example, let's say it is a "do-er" and "stop" story. Do-er specifies that the main character domain must be either Universe or Physics. Stop specifies that the objective story domain must have a companion relationship to the main character domain meaning that it must also be Universe or Physics. So, if Universe is selected as the objective story domain then Physics would be the main character domain, whereas if Physics is selected as the objective story domain, Universe would be the main character domain.

Now let's change the example to a "do-er" and "start" story. Start specifies that the objective story domain must have a dependent relationship to the main character domain meaning that it must be either Psychology or Mind. If Psychology is selected to be the objective story domain, then the main character domain would be Universe. If Mind is selected to be the objective story domain, then the main character domain would be Physics.

Although the dynamic and structural choices seem simple, the "domain" relationships have a profound effect on the dramatic potentials and progressions in a story.

Quads of character elements are subject to the same four act appreciation as other quads. As a result, the order of character interactions in Scenes is determined by the temporal 1234 sequence of the elements they contain. The nature of the interactions between characters is determined by the PRCO of the elements they respectively contain. This information can be used to determine which characters need to be represented in which scenes by employing characters that contain the elements called for at a given point in the storyform's sequence.

This much detail might seem limiting, yet all of the information the storyform model provides is a result of the interaction of structure and dynamics in response to an author's decisions as to what kind of message she or he wishes to encode. The model is able to keep Character, Plot, Theme and Perspective consistent with an author's intent. When the dramatics are consistent, Acts, Sequences, Scenes, and Events form as natural partitions between fractal dimensions as structure and dynamics interact.

We have developed a complete model that describes what all the parts of story are and how they relate to one another. But what does it all mean? If the storyform concept is such a complex and sophisticated model, why should it have evolved in the first place? What does it represent?

If we stand back a bit and look at the overall kinds of meaning the storyform holds we see four appreciations recurring throughout the model: Motivation, Methodology, Means of Evaluation, and Purpose. We see all four in the element level of the Objective Characters: each set of sixteen elements falling into one of those categories. If we look at the four vertical levels, we see these four appreciations reflected there as well. The element level represents Motivation. Means of Evaluation is provided by theme. Methodology is explored in the plot level, and Purpose is determined by the perspective. These four essential meanings are reflected holographically throughout the storyform describing all the essential concepts involved in dealing with a problem. And that is where the answer lies: the model itself is an analogy to a human mind's problem solving process.

Characters represent the points of view that the human mind adopts when considering a problem. Plot events describe the methodologies the mind uses in the attempt to resolve the problem. Theme mirrors the way the mind evaluates its progress. Domains quantify the perspective of what the nature of the problem appears to be.

Acts, sequences, scenes, and events are natural break points where the mind shifts gears and adopts new points of view, methodologies, means of evaluation or perspectives in the course of considering the problem. The structural components in a story describe the processes of the mind seen as objects arranged in fractal dimensions: in short, a mind set at a given moment. The dynamic components in a story describe the bias of a mind seen as tendencies arranged in frictal dimensions: in short, the manner in which a mind set is changing over time as it considers the problem.

This psychological explanation seems to satisfy the purpose to which stories exist. Still, one consideration remains: how could such a complex psychological model come into being in the first place? Surely no author ever sat down to create a story that was an analogy of the mind! Of course there is no way to know for sure, but we imagine this model was unknowingly created by generations of storytellers as they attempted to reach and move their audiences. To successfully argue the solution to a story's problem, these storytellers had to anticipate *all* the alternative solutions the audience might consider and represent them in the story. If any potential solution is not addressed, the story will suffer from either a "plot hole" or an inconsistent character or theme. By addressing all other potentially appropriate means of solving the problem and showing them to fail, the story's argument that a particular solution is uniquely appropriate is fully made and an analogy of the mind's problem solving process is created in the conventions of story.

We call a story of this nature a *Grand Argument Story*, and the analogy of the human mind it embodies, the *Story Mind*. It is the Story Mind that creates the richly complex experience of Storyviewing. And it is this same analogy that allows our Model of story, Dramatica, to create form without formula and to predict without being predictable.

In the end, Dramatica does not mechanize story creation, but mirrors the very processes of our own minds, supporting an author's instincts and opening gateways to whole new dimensions of creative exploration. Yet, story creation is just the beginning. In part two of this article, we will describe a new understanding of the processes of the mind called *Mental Relativity* and define the nature of self-awareness based on the mathematical model at the heart of Dramatica.