**SCREENPLECTICS**

**APPROACHING THE SCREENPLAY AS A COMPLEX SYSTEM: UNDERLYING MECHANICS, INTERRELATING DYNAMICS AND THE PLOT-ALGORITHMIC PROCESS**

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# Abstract

While the first notions of dramatic writing were investigated by Aristotle, the advancement of theoretical screenwriting has been limited to the necessary transformations from silent cinema to the present day motion pictures, and the attempts of popularized "how-to" techniques to further investigate the field. These techniques were based on internalised rules-of-thumb drawn from purely inductive observations of existing screenplays, often modelled to fit the assumptions of the theories under investigation. Such analyses, however successful they may have been, failed to provide answers on two troubling fundamental questions: first, how or what makes stories emerge in the context of narrative, and second, what are the underlying dynamics that allow a screenplay to function as a unified whole? This research consolidates the notion that for the comprehension of such complex dynamics, often encountered in various forms of narrative, a more comprehensive theory of narrative is required. Further, it argues that a way of thinking similar to Popper's model for the advancement of knowledge, used in conjunction with Screenplectics, the herewith proposed semantic model for the understanding of such structural dynamics, would benefit the field. The contribution of Screenplectics lies in the centre of its initial foundation. First, by explaining how a screenplay functions synergistically, and appropriating the necessary metaphors, systemically. Second, by explaining the mechanism that is

employed between compositional interactions in various structural levels that allows the coherent accumulative derivative we call *story* to emerge. The transition from an empirical to a theoretical perspective is achieved by examining the aforementioned dynamics under the prism of holism, and by introducing, again with the employment of metaphors, characteristics of complex systems: a network of components arranged hierarchically that interact parallel to one another in non-linear ways. This hierarchy shapes the foundation of the different layers of structure in a screenplay: deep, intermediate and surface structure.

**Author's declaration**

I declare that the work contained in this thesis was carried out in accordance with the regulations of the University of Birmingham and is the original product and sole effort of the author.

No part of this thesis has been submitted as part for any other academic award other than the one it is initially intended, i.e. of Doctor of Philosophy in the Department of American and Canadian Studies of the University of Birmingham.

This thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed hereby are those of the author and in no way represent those of the University.

George Varotsis

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**Dedications**

To my father and the loving memory of my mother
with love and gratitude


To my beloved wife
who has given me everything and
knows my inner workings better than I do


To my daughter
who changed my worldview
with just a gentle touch of my lips


To my brother
with whom I am so different
yet so much alike


To my in-laws
for extending the immense love
they have for their daughter to my person


To the anonymous Cretan man
who postponed my crossing of the river Styx
by daunting Charon

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# Chapter One

**An introduction to Screenplectics**

## 1.1    Summary

As an academic discipline, screenwriting has come a long way since the first motion picture was projected in April 23, 1896.   As a film theorist with a keen interest in screenwriting, and its peculiar status of lacking 'literary' merit, Steven Price gives one explanation for the neglect of the screenplay in the field of film studies:

> "...at the same time as film theory was in the vanguard of attempts to decentre the individual human subject, a dominant strand in film criticism was committed to the quite opposite project of reconceiving what had previously been considered a collaborative medium as a vehicle for expressing the world view of individual directors. " (Price, 2010, p. 6)

Price continues by adding that with:

> "...such a radical devaluation of the role of the writer, which in Anglophone countries had never acquired significant cultural status in any event, it is hardly surprising that film writing became the last place in which to search for evidence of literary merit." (Price, 2010, p. 6)

While the first notions of narrative were investigated by Aristotle, the advancement of theoretical screenwriting was limited to the necessary transformations from silent cinema to the present day motion pictures, and the attempts of popularized "how-to" techniques, such as Syd Field's (Field, 2003; Field, 1984a; Field, 1984b), Robert McKee's (McKee, 1999) and Linda Seger's (1994), to further investigate the field.

These techniques were based on internalised rules-of-thumb drawn from purely inductive interpretations of existing screenplays, often modelled to fit the assumptions of the theories under investigation. Syd Field's analysis of *Chinatown* by Robert Towne (Field, 1984a), is an accumulation of speculative inferences on what techniques the author might have been applying. Such analyses, however successful they may have been in nurturing new writers, failed to provide answers on two troubling fundamental questions: first, how or what makes stories emerge in the context of narrative, and second, what are the underlying dynamics that allow a screenplay to function as a unified whole.

Keir Elam (1980, p. 2) in *The Semiotics of Theatre and Drama* identifies that: "...the epithet dramatic indicates the network of factors relating to the represented fiction", and although he does not identify those factors, he wonders whether:

> "...it is possible to refound in semiotic terms a full-bodied poetics of the Aristotelian kind, concerned with all the communicational, representational, logical, fictional, linguistic and structural principles of theatre and drama." (Elam, 1980, p. 3)

Elam's remark explicitly expresses a need, if not a call, for a more comprehensive theory of narrative. The term 'narrative' connotes a wider meaning to fiction writing that is not only intended for stage representation (Elam, 1980) but embraces screenwriting, writing for

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theatre and TV, and novelised fiction.  These fields employ the same underlying principles, rules and strategies, for the creation of narrative content, and the term will be used within this context throughout.

This research consolidates the notion that for the comprehension of such complex dynamics a more comprehensive theory is required. Further, it argues that a way of thinking similar to Popper's model for the advancement of knowledge, used in conjunction with the proposed semantic system for the understanding of such structural dynamics, would benefit the field.  Throughout this research I will be referring to this model as *Screenplectics*, for brevity and clarity.  Screenplectics is a neologism that entwines the meaning of the words *complexity, screen*, and *symplectics*, a mathematical term deriving from the Greek word πλεκτός (*plektos*) (Gell-Mann, 1995, p. 2), and which carries the meaning of "braided together."   The contribution of *Screenplectics* lies in the centre of its initial foundation.  First, by explaining how a screenplay functions synergistically, and by appropriating the necessary metaphors, systemically.   Second, by explaining the mechanism that is employed between compositional interactions in various structural levels that allows the coherent accumulative derivative we call *story* to emerge.

The transition of screenwriting from a purely empirical to an abstract or theoretical perspective will be achieved by examining the underlying

story dynamics under the prism of complexity theory, and by introducing, with the employment of the necessary metaphors, characteristics of complex systems. Described from a complexity theory perspective, a screenplay is constituted of a network of dramatic components, i.e. characters, that are arranged hierarchically and interact parallel to one another in non-linear ways. The basis of *Screenplectics*' generative nature from deep to surface structures is the *plot algorithm.* This mechanism allows, through contextual and semantic dramatic transformations of story information, a plethora of story alternatives to be created from a finite number of story parameters.

This research will focus on the critical analysis of the structure and the narrative aspects of screenplays that are modelled with the three-act structure paradigm often encountered in Hollywood films for two reasons. The first reason is that my "pre-pro" engagement with screenwriting as a screenwriter who has literary representation from a Hollywood management firm for more than two years has increased my specialization with screenplays of the above type making the case of presenting arguments easier. The second reason is that in this market where the competition is fierce and Hollywood studios have slashed their huge development budgets that were the norm in the heyday of the "spec" market of the 1990s and the 2000s speculative (spec) screenplays hitting the market must utilize a very tight narrative

logic, along with an original concept, in order to stand a good chance of finding financing.  In other words, in the present day Hollywood studios seek screenplays that excel both in execution and concept, where a substantial process of script development has been carried out in advance by the screenwriter and his representatives independently, as neither the execution or the concept alone are enough to position the narrative work in the market.  In a way, Hollywood studios seek screenplays that, with the exception of having a budget, a cast and key crew attached, are ready to be pushed into production, having deferred their development expenditure to screenwriters and their representatives.  Thus, this research aspires to present herewith all the narrative dynamics, mechanics and philosophical perspective that will aid the production of screenplays with tighter narrative logic.

## 1.2    Analysis of systems and the contributions of structuralism

The analysis of film systems began with the shift of critical epistemology to language analysis and continued with the application of structuralism in film narratology and semiotics that can be found in the work of Metz (1974) and Buckland (2000; 1999).  The main focus of a film semiotic analysis is the subtle communication between the spectator and the dramatic work, i.e. a motion picture, and how a spectator interprets the received signs.  The aim, inspired by Saussure

and his work on the application of structuralism in modern linguistics, is to explain how a system, with increased levels of complexity, works. The isolation of units and the examination of their relations within a given system was called 'structuralism' (de Beaugrande, 1982, p. 384). The isolation of units and the positioning of 'levels within a hierarchical perspective' (Barthes, 1975, p. 242) can be regarded as one of the major contributions of structural analysis.

Saussure's idea was based on the notion that *langue* must be seen as a structure, or has a structure in itself, which has certain properties: distinctive units and mutual interrelations, both existing under the umbrella of a structural whole – the language (Saussure, 1966). Within this intuitive idea of distinct units, and the interrelations governing them, lies the hint for the existence of a system of interactions that is more subtle than it first appears: a system that is only understood under the prism of wholeness, or holism, and which properties I will scrutinize in the chapters to follow. What gives rise to the meaning of the system is the mutual interrelations (Stam *et al.,* 1992), the constant interactions, the differential properties, and the transformations between the units. As Saussure (1966) argues language is a:

> "...series of phonetic differences matched with a series of conceptual differences. Concepts, therefore, are purely differential, defined not by their positive content, but rather by their relation with other terms of the system..." (Saussure, 1966, pp. 117-118)

In relation to the above Levi-Strauss (1974) notes that:

> "Like phonemes, kinship terms are elements of meaning; like phonemes, they acquire meaning only if they are integrated into systems. 'Kinship systems' like 'phonemic systems', are built by the mind on the level of unconscious thought." (Levi-Strauss, 1974, p. 34)

In order for film semioticians to be able to explain the transformation process, they borrowed the term 'commutation test' from structural linguistics, a deductive method that categorizes and classifies signs and is demonstrated transitionally from one structure to another through the existence of a direct correlation between a change on the deep structure and a change on the surface structure. As Buckland argues: "...the commutation test enabled Saussure to describe speech (la parole) as an infinity of messages generated by a finite, underlying system (la langue)" (Buckland, 2000, p. 11).

A similar structural approach was attempted by Levi-Strauss in 1967 in *Structural Anthropology* (1974). The intention was the justification of a universal grammar of narratives through the establishment of an underlying framework of story elements. Nonetheless, no framework of rules and generative transformations was proposed, although Levi-Strauss touched upon the ideas of deep structures, as an extension of his studies on Propp's analysis of the Russian folktales. Stam, Burgoyne and Flitterman-Lewis (1992) characteristically describe this as: "...

retaining the basic idea of kernel narrative structure, a kind of structural DNA" (Stam *et al.*, 1992, p. 20).

Vladimir Propp in his *Morphology of the Folk Tale* (1968) found that all the tales had identical structures and that their basic components, i.e. characters and events, could be categorized into a number of different functions. Story events bring about a meaning of change to the character, either of a positive or negative nature, to which the character must react through action, thus the generation of dramatic conflict (McKee, 1999). Similar character functions to Propp's are used in present day storytelling but are acting more as character archetypes rather than kernel components. Such character archetypes provide a sense of direction to the author and a sense of identification to the spectator, without them being elevated to the corner-stones of dramatic composition as Propp presented them to be. Stories that utilize such mythical structure, i.e. Star Wars, The Matrix, and Star Trek, usually follow what is referred to as *The Hero's Myth*, a specific plot structure and story progression initially described by Joseph Campbell (2008) in *The Hero with a Thousand Faces*, and later by Christopher Vogler (1998) in *The Writer's Journey*.

Propp's findings were extrapolated into a universal pattern in an attempt to create a generative grammar of narratives. As Stam, Burgoyne and Flitterman-Lewis explain: '...by dissolving the thirty-one

functions into synchronic patterns of opposition which would not depend on the unfolding of a uniform sequence of events' (Stam *et al.*, 1992, p. 20). However, Propp did not set out to create a 'grammar of stories' but rather catalogue meaningful forms of tales. His studies concentrated on the collection of common patterns in Russian folktales without offering many details on the role of the story-teller (de Beaugrande, 1982, pp. 383-384). Although Levi-Strauss and Greimas proposed a model of deep structures based on Saussurean linguistics none of their theories was able to encapsulate the true essence of a universal grammar of narratives. The main reasons are that no one, up to that day, was able to, as Gerald Prince puts it in the *Grammar of Stories*, identify "...with precision the basic structural units of a story" (Prince, 1973, p. 11), and the relations that govern their interconnections, other than the cause-and-effect logic that drives, and links narrative events (Stam *et al.*, 1992).

This cause-and-effect succession of narrative events was signified as the surface structure by Levi-Strauss, with the underlying meanings of the Russian tales acting as the deep structure. This causality is one of the reasons for the generation of dramatic conflict in stories. Causality is projected onto the surface structure through the step-by-step action and interaction of the story's characters. The mechanism itself, and its description, that sets in motion the dramatic units in the deeper structures is missing from all the proposed theories of narrative. The

absence of such mechanism, and the deeper understanding it provides on how stories are composed in their deeper levels, is the main reason why these theories appear to be problematic. Furthermore, Strauss' approach did not identify the inner workings or transformations of such a mechanism through which the deeper meaning of myths are projected onto the surface structure. As I will explain in chapter four, and unlike the uniformed and limited re-production of stories which the shuffling of Propp's thirty-one functions seem to produce, *the plot algorithm* mechanism can generate a multitude of story events from a finite number of story parameters.

Cognitive film semiotics analysed film systems by applying concepts originally developed in structural linguistics in order to understand how spectators understand motion pictures through the transmission of signals. However, the focus of film semiotics is to explain the relationship between the viewer and the work, treating them both as stand-alone but overlapping systems. As Buckland explains:

> "In analyzing film from semiotic perspective, film scholars bring to film theory a new level of filmic reality. They successfully demonstrate that the impression or unity and continuity each spectator experiences at the cinema is based on a shared, non-perceptible underlying system of codes that constitutes the specificity of, lends structure to, and confers intelligibility on the perceptible level of film."
> (Buckland, 2000, p. 10)

This structural and systemic approach is the only commonality shared between the cognitive film semiotics and *Screenplectics*, which sets to explain how a work of narrative is created one level below, and not how it could be interpreted by the audience. However, semiotics may not have been the best approach for the understanding of filmic influences as these have been originally intended by the author for a variety of reasons. The most important is that film semiotics deal primarily with '*how* signs mean rather than *what* they mean' (Sturrock, 1986, p. 22). The *what* dimension is better explained by semantics that seek to analyze units combined in larger systems out of which they derive their meaning. As Sturrock argues in *Structuralism*:

> "Semiotics has to do with the word as a unit, semantics with words combined in sentences: in semantics the 'meaning' results from the sequence, appropriateness and adaptation of the different signs among themselves." (Sturrock, 1986, p. 22)

It is evident by now why the interrelationships of story components play a fundamental role in our understanding of narrative models like *Screenplectics* since they are the corner-stones for the creation and communication of emotions with which the audience is able to relate. It is this intricate deeper relationship between dramatic units clustered into larger systems that Noam Chomsky (1968; 1965) sought to explain in his work in generative grammatology, which will also helps us to diverge from the rigid *a priori* propositions of structuralism. Chomskyan Standard Theory (Chomsky, 1968; 1965) comprises of deep,

intermediate and surface structures, and a set of base rules that create a finite number of deep structure propositions. It also includes a mechanism that utilizes transformational rules in order to generate infinite surface structures propositions (Chomsky, 1965). The reason, however, Chomskyan grammar is not applicable to narrative models such as *Screenplectics* is that linguistic components are rigidly defined, i.e. the uses of adjectives, nouns and verbs, among others, perform a well defined function within sentences, which makes their formalization into logical propositions feasible. In narrative though, the formality, as I will explain in depth in chapter two, not only breaks down, due to the abstract nature of the field, i.e. the absence of strictly defined rules and propositions leaves plenty of room for experimentation, but also it does not produce any meaningful propositions.

Nevertheless, by establishing continuities and analyzing similarities between existing systemic theories and theories of narrative, I will proceed to the description of the unobserved reality of the screenplay as a complex system through the presentation of a narrative model that utilizes sets of propositions and assertions. This will be established, first, by identifying the parts of the system, and second, the dynamics which they interact and interrelate with. As Buckland notes in *The Cognitive Semiotics of Film*, 'the resulting model is expressed in a series of hypotheses, or speculative propositions. These propositions are not obviously true or false but are probable' (Buckland, 2000, p. 7).

In complexity theory, the theory examining complex systems [CS], probabilistic behaviour, whether an event will happen or not and with what probability, is common due to the inherent indeterministic qualities of the systems in question. By indeterministic qualities I refer to the inability of observers to draw solid predictions based solely on the examination of the system's behavioural history. Notwithstanding, this goes against Buckland's assertion that a model should also manifest the same ability to 'predict' new phenomena (Buckland, 2000, p. 7). Nonetheless, *Screenplectics* would still need to manifest its internal consistency, or lack thereof, on the basis that is falsifiable, and its ability to be applied to general phenomena.

And here lies the difference between these two systems: film semiotics deal with interpretation seeking to reveal the unobserved and the unobvious, while *Screenplectics* deals with objective empirical propositions which have evolved through practice and repetition, an empirical dimension film cognitive semiotics seem to lack. This is the reason why pure inductivistic interpretive approaches have not served the field constructively, a topic which I go in greater depth in chapter 2. Meanings carry a nature of subjectivity in them. Although narrative principles have evolved through a series of empirical observations, it has been proven time and again through tangible practice, that they hold a great deal of objectivity in them. When the intentions of the authors are second-guessed and extrapolations are made based on

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discoveries that were, in turn, based on subjective interpretations, one is left to wonder if there is any apparent objectivity in the proposed theories.

It seems though that the application of interpretation for the discovery of hidden truths is hazardous.  With regards to the strengths of interpretation, Bordwell states in *Making Meaning*: '... comprehension and interpretation are assumed to open up the text, penetrate its surfaces, and bring meanings to light' (Bordwell, 1989, p. 2), and continues by adding that: 'Meanings are not found but made. Comprehension and interpretation thus involve the construction of meaning out of textual cues' (Bordwell, 1989, p. 3).  And although audiences are free to interpret films whichever way they wish, through, possibly, an application of a theoretical film grammar, they do not engage in the generation of universal objectivity from specifics.  As I will explain in chapter two, for that to be achieved an inductive theory has to be justified empirically by evidence even if it does not generate inferences and propositions with absolute certainty or rigidity.  Through a process similar to deduction, conclusions will derive from the initial assumptions having a universal explanatory adequacy.  This way, a universal applicability of the model's propositions to all screenplays should be feasible, and will not be narrowed by genre, filmic school of thought, or research trends.

## 1.3    Structuralism elevated: holistic systems

Seen within the context of a holistic system, the units have no intrinsic meaning if examined individually but they acquire significance due to the synergy produced through the interrelations between them.  This is an integral part of *Screenplectics* since such interrelations create the matrix for the emergence of coherent works of narrative, elevating individual interactions into a cohesive whole whose product is larger than the sum of its individual parts.  As Hawkes states '... constituent parts have no genuine existence outside the structure in the same form they have within it' (Hawkes, 1977, p. 16).   Hawkes converses the idea that the interactions and interrelations of the dramatic units must always be examined in relation to the system they relate to and acquire significance from.

Thus, the components are in a constant flux with their environments, an endless bi-directional process that generates dramatic information within the system, in our case, the screenplay.  This signifies that the laws governing the narrative systems are not static, not only structuring the system but also getting structured by it, through a process Piaget identified as *transformation*:

> "... we may say that a structure is a system of transformations. Inasmuch as it is a system and not a mere collection of elements and their properties, these transformations involve laws: the structure is preserved or enriched by the interplay of its transformation laws, which never yield results

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external to the system nor employ elements that
are external to it." (Piaget, 1968, p. 5)

*Screenplectics* should be able to produce a vast variety of new alternatives, i.e. story variations, through the combination of a set of finite rules and principles that set the interactions of the components in motion: the transformational process. Stories then are generated because a framework of principles define the terms for 'dramatic engagement' and set in motion bi-directional cause-and-effect narrative dynamics.

The differential value of the interactions is generated by the most important of components that is identified in all works of narrative: the character, or the agent that has a function and carries an action. Although the character can be categorized hierarchically as the most important of dramatic components, within a holistic system individual components should be seen as equally-contributing aspects of an overall process, having an equal importance. Characters are the vehicles the audiences connect to in order to follow a story. However, a story would not function properly without a well-defined structure or the right strategic arrangement of incidents and events. This comes in direct conflict with the viewpoint structuralists hold on character, with that being the reason why structuralists have hardly accommodated characters in their theories of narrative. In *Narrative Fiction*, Rimmon-Kenan explains that the rigid commitment of structuralists to: '... an

ideology 'decentres' man and runs counter to the notions of individuality and psychological depth' (Rimmon-Kenan, 1983, p. 30). The exclusion of characters within a structuralist framework brings to the foreground the major fallacy in the structuralists' logic that ends up contradicting their own theories. As Skyttner states in *General Systems Theory*:

> "… the concept of holism received its first modern appraisal through 'structuralism', a scientific school of thought established by the Swiss linguist Ferdinad de Saussure (1857-1913). Structuralists studied 'wholes' that could not be reduced to parts."
> (Skyttner, 1996, p. 30)

But it seems to be impossible to study *wholes*, and the emergent properties they exhibit, without acknowledging that all the system's constituent parts are of equal importance. Without characters there would be no action, without action there would be no reaction, without reaction there would be no dramatic conflict, and without conflict there would be no stories. Moreover, without characters the audience would not be able to connect or identify to the dramatic through-line of any narrative set-up, rendering any storytelling attempt pointless.

In chapter three, I will argue how a narrative system can only be explained holistically rather than with reductive, or deconstructive, methods. Besides, to be able to analyze narrative for what it is, the distinction between units is of fundamental importance. In relation to

this, Barthes in *An Introduction to the Structural Analysis of Narrative*, argues that:

> "There is a world of difference between the fortuitous, in its most complex forms, and the simplest combinative or obligatory scheme: for no one can produce a narrative without referring himself to an implicit system of units and rules."
> (Barthes, 1975, p. 238)

However, by following principles of reduction in order to explain and analyze characters, a notion which, as I shall show later on, breaks down within the context of [CS], the structuralists proceeded in reducing characters to mere carriers of actions. Propp reduced characters to 'spheres of action' based on their performance dictated by their function within the story (Propp, 1968, pp. 79-80). Although, Propp's theories can be encountered in modern day narrative works, one needs to take many liberties in adapting Propp's ideas in identifiable stories made for the big screen. Propp's propositions can be applied to a rather specific kind of story which, from the outset, satisfies the story-world's prerequisites within which only Propp's ideas are meant to work. It is therefore my understanding that the application of Propp's analysis appears to be rather limited and lacks universal applicability.

Greimas created the *actantial model*, an extreme structuralistic view of characters that sees them as '*actants*' (Greimas, 1973, pp. 106-120;

1971). However, Ferrara holds the character in central notion in his attempt to create a theory of structural analysis of narrative fiction:

> "In fiction the character is used as the structuring element: the objects and the events of fiction exist – in one way or another – because of the character and, in fact, it is only in relation to it they posses those qualities of coherence and plausibility which make them meaningful and comprehensible."
> (Ferrara, 1974, p.252)

Under the prism of holism there is a unification of the above views as 'interdependent', a similar conclusion to which Rimmon-Kenan also seem to have reached: 'There are narratives in which characters predominate [character-driven stories] and others in which action does [action-driven ones]' (Rimmon-Kenan, 1983, pp. 35-36). The limited structural study of characters was also discussed by Murray Smith in *Engaging Characters* (1995). However, Smith studied characters not within a larger framework of representation, i.e. a screenplay but instead like stand-alone systems of reference.

It is the actual genre of a story, neither its character-driven nor action-driven distinction, that is taken into consideration in the dramatic equation, and no action is subordinated to character and no character is subordinated to action (Rimmon-Kenan, 1983). As Henry James puts it in *The Art of Fiction*: 'What is character but the determination of incident? What is incident but the illustration of

character?" (James, 2001, p. 862), or as Chatman in *Story and Discourse* argues about stories that:

> "… only exist where both events and [agents] existents occur. There cannot be events without existents. And though it is true that a text can have existents without events (a portrait, a descriptive essay), no one would think of calling it a narrative." (Chatman, 1980, p. 113)

Therefore, characters, their functions and actions, and events, are a bi-directional force of equal importance and logical necessity. It is, thus, difficult to pertain to the structuralist point-of-view of story strictly in terms of agents and events that are arranged into the plot by mere narrative representation (Herman, 2002, chapter 5).

## 1.4    Principles of narrative and structure

Narrative, in all the expressed forms and formats, i.e. myths, legends, tales, novels, fables, motion pictures, seems to be as old as humankind. In *An Introduction of Structural Analysis of Narrative* Barthes points out that:

> "... in this infinite variety of forms, it [narrative] is present at all times, in all places, in all societies; indeed narrative starts with the very history of mankind; there is not, there has never been anywhere, any people without narrative; all classes, all human groups, have their stories, and very often those stories are enjoyed by men of different and even opposite cultural backgrounds: narrative remains largely unconcerned with good or bad literature." (Barthes, 1975, p. 237)

It also appears that narrative appears to be comprehensible by distinctly varied cultures around the globe. As the historian of literary criticism Hayden White explains in *The Value of Narrativity in the Representation of Reality*:

> "We may not be able fully to comprehend specific thought patterns of another culture, but we may have relatively less difficulty understanding a story coming from another culture, however exotic that culture may appear to us." (White, 1980, p. 5)

What makes narrative comprehensible to a great variety of cultures is the inherent ability of humans to grasp various forms of structures, however intuitive or counter-intuitive they may appear to be. Cognitive psychologist Jean Matter Mandler, who has researched extensively on the cognitive aspects of story grammars and how they are comprehended by readers, mentions that: 'It has been shown over and over again that people either discover structure inherent in the world or impose structure upon it' (Mandler, 1984, p. 19). Mandler also adds that:

> "... meaning does not exist until some structure is achieved and the case can be made that the deeper understanding of a domain the more abstract the structure that has been uncovered or imposed." (Mandler, 1984, p. 20)

Narrative can be understood as the intricate connection of different story elements, i.e. characters and their actions based on their motivations and dramatic needs, the events caused as a result of such actions, the actions instigated from other characters in reciprocation,

temporal and spatial dimensions of the story etc., that are linked strategically under the umbrella of structure. This ongoing organizing of data is what prompted Branigan to refer to narrative as: '... either the product of storytelling/comprehending or to its process of construction' (Branigan, 1992, p. 3). Stam, Burgoyne and Flitterman-Lewis regard the:

> "... [story elements] as systems of signs... structured and organized according to different codes. Each of these signs communicates highly specific messages which relate to the story-world in diverse ways." (Stam *et el.*, 1992, pp. 70-71)

In *Narrative Comprehension and Film*, Branigan explains that:

> "Intuitively, we believe that a narrative is more than a mere description of place and time, and more even than events in a logical or causal sequence. For example, an account of the placement of objects in a room is not narrative. Similarly, though a recipe involves temporal duration and progression... it is not normally thought of as a narrative... Nor does a sequence of actions become a narrative by being causal, completed, or well-delineated... Instead, narrative can be seen as an organization of experience which draws together many aspects of our spatial, temporal, and causal perception." (Branigan, 1992, p. 4)

One of the fundamental components of narrative is goal-oriented motivation. The inclusion of a goal adds a sense of direction, forward movement and temporal progression to the story, and prevents stagnation in the unfolding of events. It was Greimas who first identified the need for the existence of a goal in stories adding: '... a sense of closure and wholeness... [emphasizing goal as] a crucial determinant of narrative' (Stam *et al.*, 1992, p. 69).

Nevertheless, it is not enough for the events to be connected, and subsequently unfold, either chronologically or chronically, so we can refer to their strategic accumulation as a story. Even though temporal succession is the 'minimum requirement'(Rimmon-Kenan, 1983, p.2), for a group of events to be regarded as story, causality must also be implemented in the connection of events and a change in the state of affairs of characters must occur.

Aristotle approached narrative as a whole, examining characters as integral aspects of an action-centred activity. Characters appear throughout a story adding a layer of continuity into the minimum requirements of narrative. In relation to this, Bordwell states that: '...some continuity of agent and some causal connection are conditions of a minimal narrative' (Bordwell, 2008, p. 89). Hence, narrative is a process of causal alteration of story information measured through sets of relationships between components. Transformations that take place in the deeper structures are regarded essential features of narrative. As Branigan puts it:

> "In a narrative, some person, object, or situation undergoes a particular type of change and this change is measured by a sequence of attributions which apply to the thing at different times... Narrative is thus a global interpretation of changing data measured through sets of relationships."
> (Branigan, 1992, p. 4)

Todorov in *The Two Principles of Narrative* argues that narrative, this causal transformation based on cause-and-effect principles, happens in five steps. First, a state of equilibrium in the beginning of the story. Second, a disruption of that equilibrium based on action with a specific motivation. Third, the identification from the hero that there has been a disruption. Fourth, the hero's attempt to correct that disruption, and fifth, the reinstatement of the initial equilibrium (Todorov, 1971, p. 39)

Todorov's theory of story transformation appears to be more widely applicable than that of Propp's and Levi-Strauss'. The distinction here is made solely on each theory's strength to explain the dynamics that set stories in motion. However, Todorov has described a model that, despite being widely encountered in a great variety of stories, remains general, if not generic, without ever going into particular depth for the analysis of such story dynamics, and without providing answers to the two fundamental questions posed in the beginning of the chapter. The models of Propp, Levi-Strauss and Todorov seem not to provide enough insight into the complex sub-world of story composition, and do not possess the necessary depth for explaining narrative beyond introductory levels. Such analyses inevitably lead to generalizations about the functions of characters, the kind of events, and their sequential ordering in stories.

Branigan expands the notion of causality successfully when he includes in the cause-and-effect process principles such as probability, possibility, impossibility and necessity of actions to occur through characters (Branigan, 1992, pp. 4-5). Since character and action are intrinsically linked, no further distinction is needed between 'action-centered' or 'character-centered' narratives other than philological analysis. Such extreme views, of either character or action, are now unified under a new whole, elevating a goal-driven character to the epicentre of a causal action-centered vigour, only adjusted to proportion to fit a specific cinematic genre. This proportionate character/action ratio adjustment is necessary, and despite stories in different genres still share the same principles of dramatic composition, they do have, however, different structural conventions and regularities between them.

### 1.4.1   Plot: a structural tool

I referred to the product of internal cause-and-effect relationships between dramatic units as *story*. Drawing an analogy, story is the change in the state of affairs of characters in the three spatial dimensions, and plot is the all encompassing temporal dimension that seems to be elusive in our initial attempts to scrutinize the narrative conventions. Dramatic time is then the 'effect of the narrative sequencing of [dramatic] data' (Simons, 2008, p. 114), and it is used as

the fourth-dimensional structural tool. Thus, plot can be referred to as the strategic arrangement of story events onto the surface structure through the use of crafting devices such as *in medias res* structuring, which exposes characters and their actions through flashbacks, removing the notion of linearity from the unfolding of events; to parallel subplots, that add another layer of dimensionality to the main story; to ellipsis, the purposeful omission of events in order to create suspense, etc. As Stam, Burgoyne and Flitterman-Lewis argue in *New Vocabularies in Film Semiotics*:

> "There are many techniques for deforming the [story], that involve some kind of 'disarrangement' of the chronological sequence of events, creating gaps, retarding the flow of information or conveying the same information several times over from a variety of different perspectives." (Stam et al., 1992, p. 71)

Paul Ricoeur's definition of plot in *Narrative Time* as: '… the intelligible whole that governs a succession of events in any story' (Ricoeur, 1981, p. 167) forces us to treat story and plot as a unified whole, both enhancing each other's role. The plot's primary role is to present the dramatic information of the story to the audience through the structural complication of four principles: *narrative logic*, *narrative story-world history*, *narrative time* and *narrative space*. This allows the audience to understand the relations between the events by making 'linear causal inferences' (Bordwell, 1985, p. 51). Depending on how the plot presents the story there can be an initial classification of the

work's cinematic genre as different complications are encountered in varied genres, i.e. the omission of clues in conjunction with the climaxing of tension is a characteristic of the thriller genre. Within that context, Bordwell argues that the plot guides the audience to perceive the story:

> "… by arousing in us particular expectations at this or that point, eliciting our curiosity or suspense, and pulling surprises along the way." (Bordwell, 1985, p. 52)

Bordwell (1985) states that:

> "… an ideal [plot] supplies information in the 'correct' amount to permit coherent and steady construction of the [story]. Given this hypothesized reference point, we can distinguish a [plot] which supplies too little information about the story and a [plot] which supplies too much: in other words, a rarefied [plot] versus an 'overloaded' one." (Bordwell, 1985, p. 54)

It seems then that the optimal structuring of a plot is the one that allows the dramatic information to surface and reach the audience without the story having to suffer from simplification or over-complication.

### 1.4.2   Narrative schema

It is the search for universal narrative patterns, through identification, that makes readers and audience alike relate to a story through a method of plot analysis. This method allows the acts of encoding, comprehending, storing and remembering the features of narrative. Branigan referred to this as the *narrative schema* (Branigan, 1992, p.

113).   The concept of schemata was originated as a theory of memory and was suggested by Frederic Bartlett, one of the forerunners of cognitive psychology, in his book *Remembering* (Bartlett, 1932). Although the term *schema* was initially introduced by Jean Piaget in *Origins of Intelligence in the Child* (Piaget, 1936), *schema theory* was expanded as a concept by the educational psychologist Richard Anderson in *The notion of Schemata and the Educational Enterprise* (Anderson, 1977), with significant subsequent contributions by Dave Rumelhart in *Schemata: the Building blocks of Cognition* (Rumelhart, 1980).  As Greene put it:

> "... the basic idea is that human memory consists of high level structures known as schemas, each of which encapsulates our knowledge about everything connected with a particular object or event." (Greene, 1986, p. 34)

In terms of language, Greene mentioned that schemas '... represent the general knowledge which aids the understanding of conversations and texts' (Greene, 1986, p. 35).  A schema is a mental framework, an organizational structure, for the classification and categorization of knowledge in hierarchical patterns through relevance of information that help us comprehend various concepts.   Branigan explains that:

> "... certain information in a narrative is elaborately processed and assigned to a hierarchy in a working memory according to relative importance while much else is discarded." (Branigan, 1992, p. 15)

The schema organizes information already existing in the perceivers' memories, allowing them to classify new data that will in turn dictate what the perceivers will remember, or forget, when exposed to a new narrative.   As Branigan states:

> "... the classifications which a person imposes on material at the time of its processing will limit the ways in which the material can be subsequently accessed and used in problem-solving." (Branigan, 1992, p. 13)

The interaction of schema and already-stored data is complex and bi-directional, reconstructing the 'mental representations that have in turn guided their production [in the first place]' (Herman, 2002, p. 1).   While the schema tests new data, the old data in the memory of the perceiver test the adequacy of the schema's criteria.   In relation to this, Branigan argues that:

> "A schema tests and refines sensory data at the same time that the data is testing the adequacy of the (implicit) criteria embodied in the schema.  The interaction of schema and data creates a perceiver's recognition of global patterns characteristic of that data." (Branigan, 1992, p. 14)

This two-way interaction gives rise to meaning and makes the identification of universal narrative patterns possible 'through the interpretation of characters, actions and events that form the story' (Herman, 2002, p.1).  However, its nature remains probabilistic since it includes assumptions and expectations rather than rigorous qualities based on pre-determined conditions.   Branigan explains that:

> "Thus when meaning has been attributed to something through the use of a schema, the meaning has a probabilistic quality which incorporates assumptions and expectations rather than an absolute quality defined by necessary and sufficient conditions." (Branigan, 1992, p. 14)

The narrative schema, as was analysed by Branigan (1992, p. 14) in *Narrative Comprehension and Film,* allows the identification of patterns, and has seven stages abiding to the following format:

i) the set up, that includes an introduction of the characters and the temporal and spatial dimensions of the story,

ii) explanation of the state of affairs, that includes the basic dramatic question of the story, or what the story is about,

iii) the inciting incident, the first major dramatic event that sets the story in motion and acts as the cause for everything that follows,

iv) the emotional response of the audience to the protagonist's statement of her dramatic goal or need,

v) the complicating actions of the protagonist to resolve the dramatic problem or achieve his dramatic goal,

vi) the outcome of her struggle, and

vii) the reactions to this outcome.

### 1.4.3 Story grammars

The first story grammar was proposed by cognitive linguist George Lakoff in *Structural Complexity in Fairy Tales* (Lakoff, 1972) as a reformulation of Propp's theories on Russian folktales, using mainly syntactic rewrite rules (Black and Wilensky, 1979, p. 213). Soon story grammars proliferated and attempts were presented by anthropologist Benjamin Colby in *A Partial Grammar of Eskimo Folktales* (Colby, 1973) and in psychological literature by psychologists Dave Rumelhart (1975) in *Representation and Understanding: Studies in Cognitive Science* and P. W. Thorndyke (1977) in *Cognitive Structures in Comprehension and Memory of Narrative Discourse*. Subsequent contributions were made by psychologists Jean Mandler and Nancy Johnson (Mandler and Johnson, 1977) in *Remembrance of Things Parsed: Story Structure and Recall*, Nancy Johnson and Jean Mandler (Johnson and Mandler, 1980) in *A Tale of Two Structures: Underlying and Surface Forms in Stories*. In the field of narratology, apart from the work of Propp and Todorov, and of Levi-Strauss in anthropology, research on story grammars was carried out by Roland Barthes in *An Introduction to the Structural Analysis of Narrative* (1975), by Robert de Beaugrande in *The Story of Grammars and the Grammars of Stories* (1982), by Gerald Prince in *Grammar of Stories* (1974), Shlomith Rimmon-Kennan in *Narrative Fiction: Contemporary Poetics* (1983), Algirdas Greimas in *Narrative Grammar: Units and Levels* (1971), and Seymour Chatman in

*Story and Discourse: Narrative Structure in Fiction and Film* (1980), among others.


*Story grammar* is a formal rule system that helps to specify how works of narrative conform to 'regularly occurring forms' (Mandler and Goodman, 1982, p. 507) and how stories can be broken into sets of components. In contrast to schemas are the mental structures that 'reflect [on] those regularities [of narrative]' (Mandler and Goodman, 1982, p. 507). In relation to this, Mandler explains that:

> "A story schema ... is a mental structure consisting of sets of expectations about the way in which stories proceed. The close connection between a story grammar and a story schema arises from the fact that the story schema is a mental reflection of the regularities that the processor has discovered (or constructed) through interacting with stories."
> (Mandler, 1984, p. 18)


Whether, in Thorndyke's own words a grammar:

> "... assumes that stories have several unique parts that are conceptually separable, although in most stories the parts are rarely explicitly partitioned and are usually identified inferentially by the reader. It consists of a set of production providing the rules of the narrative syntax and is independent of the linguistic content of the story. The successive application of these productions in generating representation of a story results in a hierarchical structure that has as intermediate nodes abstract structural elements of the plot and as terminal nodes actual propositions from the story."
> (Thorndyke, 1977, p. 80)

One of the aims of story grammars is to develop a rule system which provides a theoretical model of understanding of stories for readers. Although story grammars and linguistic sentences are not directly connected, the similarities between the two rule systems suggest that there are at least some commonalities between them. As Johnson and Mandler indicate:

> "In particular, both sentences and stories consist of serially ordered constituents, and both have evolved under 'real-time' processing constraints which are, at least in part, a function of the limitations of working memory. Only a few items can be held in mind at one time. As new items come along, previously presented items must be recoded and organized into larger units if they are to be retained, i.e. high-order structure is required by the nature of the processing system." (Johnson and Mandler, 1980, p. 55)

Even though an in depth analysis of story dynamics, and the underlying rules and principles of narrative, is attempted in chapter four, it is worth mentioning here that story grammars are consisted of rules that:

> "...describe the units of which stories are composed, that is, their constituent structure, and the ordering of the units, that is, the sequences in which the constituents appear." (Mandler, 1984, p. 18)

However, story grammars appear only to be dealing with syntactic rewrite rules: the story is broken down to elementary components e.g. the story is constituted of setting, theme, plot, and resolution; the setting is broken down as a constitution, and accumulation, of characters, locations, and the all encompassing time (Thorndyke,

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1977).  These story analysis approaches, however applicable they may be, are not dealing with deep-rooted story dynamics but only with the generic, and often common, characteristics of stories.  Examples of such story grammars are presented in figures [1.1] and [1.2].

FABLE    ⟶    STORY AND MORAL

STORY    ⟶    SETTING AND EVENT STRUCTURE

SETTING   ⟶   { STATE* (AND EVENT) / EVENT }

STATE   ⟶   STATE ((AND STATE)))

EVENT   ⟶   EVENT (( { AND / THEN     EVENT)) ((AND STATE)) / CAUSE } )

EVENT STRUCTURE   ⟶   EPISODE ((THEN EPISODE))

EPISODE   ⟶   BEGINNING CAUSE DEVELOPMENT CAUSE ENDING

BEGINNING   ⟶   { EVENT / EPISODE }

DEVELOPMENT   ⟶   { SIMPLE REACTION CAUSE ACTION / COMPLEX REACTION CAUSE GOAL PATH }

SIMPLE REACTION   ⟶   INTERNAL EVENT ((CAUSE INTERNAL EVENT))

ACTION $\longrightarrow$ EVENT

COMPLEX REACTION $\longrightarrow$ SIMPLE REACTION CAUSE GOAL

GOAL $\longrightarrow$ INTERNAL STATE

GOAL PATH $\longrightarrow$ $\left\{\begin{array}{l} \text{ATTEMPT GOAL OUTCOME} \\[1em] \text{GOAL PATH (CAUSE GOAL PATH)} \end{array}\right\}$

ATTEMPT $\longrightarrow$ EVENT

OUTCOME $\longrightarrow$ $\left\{\begin{array}{l} \text{EVENT} \\ \text{EPISODE} \end{array}\right\}$

ENDING $\longrightarrow$ $\left\{\begin{array}{l} \text{EVENT (AND EMPHASIS)} \\ \text{EMPHASIS} \\ \text{EPISODE} \end{array}\right\}$

EMPHASIS $\longrightarrow$ STATE

Figure [1.1] Summary of Rewrite Rules for a Simple Story Grammar

(Mandler and Johnson,1977, p. 117)

STORY $\longrightarrow$ SETTING + THEME + PLOT + RESOLUTION

SETTING $\longrightarrow$ CHARACTERS + LOCATION + TIME

THEME $\longrightarrow$ (EVENT) + GOAL

PLOT $\longrightarrow$ EPISODE

EPISODE $\longrightarrow$ SUBGOAL + ATTEMPT + OUTCOME

ATTEMPT $\longrightarrow$ $\left\{\begin{array}{l} \text{EVENT} \\ \text{EPISODE} \end{array}\right\}$

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OUTCOME $\longrightarrow$ $\left\{\begin{array}{l}\text{EVENT}\\\text{STATE}\end{array}\right\}$

RESOLUTION $\longrightarrow$ $\left\{\begin{array}{l}\text{EVENT}\\\text{STATE}\end{array}\right\}$

$\left.\begin{array}{l}\text{SUBGOAL}\\\\\text{GOAL}\end{array}\right\}$ $\longrightarrow$ DESIRED STATE

$\left.\begin{array}{l}\text{CHARACTERS}\\\text{LOCATION}\\\text{TIME}\end{array}\right\}$ $\longrightarrow$ STATE
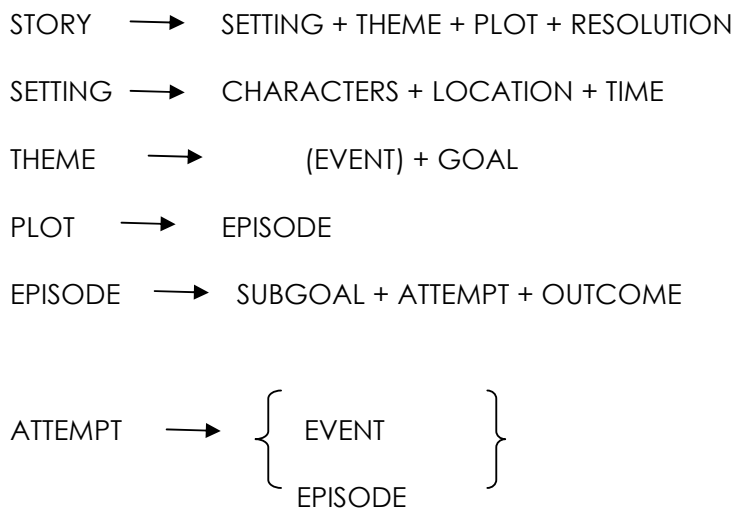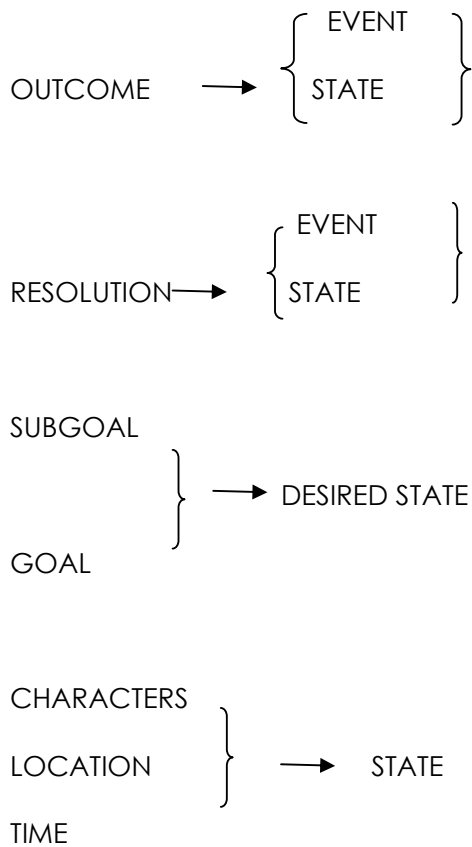
Figure [1.2] Grammar Rules for Simple Stories (Thorndyke, 1977, p. 79)

### 1.4.4   Why structural and formal story grammars are inadequate

Transformational grammarians, like structural linguists, focus on the formal system of story analysis but have kept the semantic perspective separate, even diconnected, from the syntactic level.  This division appears to be problematic, similar to separating a screenplay from its context, its structure, and its inner transformational dynamics, without having a theory to connect them all.  This approach is like trying to understand how a story is generated in the deep structural levels

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without taking into consideration the fact that each dramatic component has a function and conveys a meaning, contributing to the larger system more than its pre-determined function dictates.

The reason story grammars have been proved inadequate is three-fold. First, they only deal with story transformation as that appears onto the surface structure, i.e. setting, characters, locations, theme, while ignoring the inner dynamics of stories, i.e. the motivations of the characters, the actions emerging from those motivations, constraints in story logic, transformation mechanisms linking all the components, and of course, their semantic interrelations and interconnectivity. With the exception of Thorndyke's story grammar (1977), the rest of the theories lack any semantic representations and deal only with the syntactic, and generative, aspects of story transformations, an approach that is similar to Chomskyan linguistic grammar. Thorndyke explained that, for example, it is the conditions in the setting of the story that 'allow' the story to progress, i.e. the Episode (an act, e.g. Act I) to occur (Thorndyke, 1977, p. 79). Second, no story grammar includes how structure itself imposes semantic constraints by way of rewrite rules into the story. For the most part, story grammars have been trying to establish transformational rules of story computation similar to formal and linguistic reproductive capacities. However, none of the story grammars provide explanations for the transformational dynamics of

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stories on the semantic level. As Black and Wilensky note in *An Evaluation of Story Grammars*:

> "...no detailed model has been developed that describes how a story grammar would be used to understand story, therefore we must make some assumptions about how such model might work."
> (Black and Wilensky, 1979, p. 223)

Third, story grammars deal with characters only on a philological level, treating them not as the foundation of the stories they populate but as structural tools for merely conveying action, similar to Greimas' *actants*. It has already become clear that both syntactic and semantic representation is needed for the comprehension of a story through a tentative narrative model such as *Screenplectics*. In chapter four where the story dynamics from a holistic perspective are explored solutions are presented to all these problematic issues.

Explaining why story grammars touch only on problems on the surface structure of stories, Alan Garnham in *What is Wrong With Story Grammars* concludes that: 'a story grammar is no more a theory of text comprehension than a grammar of English is a theory of sentence comprehension' (Garnham, 1983, p. 147). Much of the empirical research (Johnson and Mandler, 1977; Rumelhart, 1975; Stein and Glenn, 1979, Thorndyke, 1977), that followed Lakoff's (1972) findings that Propp's (1968) propositions can be stated as a formal grammar system

of rewrite narrative rules, must be put to test whether they provide

answers to two questions stated by Johnson and Mandler:

> "First, one might want to ask about the observational adequacy (or weak generative capacity) of the grammars: do they generate all and only the well-formed stories within a given domain? A second criterion has to do with descriptive adequacy (or strong generative capacity): do the grammars assign correct structural descriptions to the stories they generate?" (Johnson and Mandler, 1980, p. 77)

Or as Garnham puts it:

> "It is whether the theory can usefully be applied to stories at all, and if it can, whether story grammars form part of a psychological model of story understanding and generation." (Garnham, 1983, p. 146)

Story grammars are effective when dealing with simple material that

often utilize a single character striving for the attainment of a single

goal.  Black and Wilensky explain that:

> "...,they do not apply to stories in which the major character has multiple simultaneous (and possibly conflicting) goals."  (Black and Wilensky, 1979, p. 220)

Examples have been children's stories (Mandler and Johnson, 1977),

folktales (de Beaugrande, 1982; Colby, 1973; Propp, 1968; Todorov,

1990, 1977, 1975), newspaper reports (Van Dijk and Kintsch, 1983), or

even fairy tales (Lakoff, 1972).  As I explained above, the single-

protagonist stories certainly prove inadequate when they are dealing

with more complex narrative material where a multitude of characters,

motives, goals, and needs are interconnected under a common theme and an intricate plot.

In Thorndyke's model, shown in figure [1.2], a special mention is made to the symbol "+", and as Thorndyke explains it "... indicates the combination of elements in sequential order" (Thorndyke, 1977, p. 80). But if we return to figure [1.2] this assertion breaks down, as Thorndyke claims that: 'story = setting + theme + plot + resolution' (Thorndyke, 1977, p. 79). But plot cannot occur sequentially to setting and theme when theme has an abstract underlying nature that pervades story. Besides, a story is not only an accumulation of setting, theme, plot and resolution, presented sequentially by Thorndyke. Stories usually involve characters, their motivations, and their goals, all acting, interacting and reacting both in context and subtext.

The second of Thorndyke's propositions states that: 'setting = characters + location + time' (Thorndyke, 1977, p. 79). So it seems that Thorndyke touches semantically upon the dramatic units in a very general way, without presenting rewrite narrative rules that take specific parameters into consideration, i.e. topology of locations, locality, time of day and chronic positioning of the story-world, the relations between them and the relations between characters. De Beaugrande argues in relation to this:

"Categories like 'setting', 'location', and 'time' are semantically determined, not syntactically. Thus, these structural rules can be applied only with constant recourse to passage content; at most, they are independent of the specific details of passage content (e.g., where the location is, and what time is.) Moreover, these rules are not fully syntactic because they do not all have to do with sequencing." (de Beaugrande, 1982, p. 388)

Todorov attempted a logico-formal approach that included character in a deeper level in contrast to the previously mentioned attempts of cognitive psychologists and cognitive linguists. However, Todorov's approach remains focused on the syntactic instead of the semantic aspects of story dynamics and is effective only when single-character stories are being facilitated. Although, Greimas' *actantial* model, which was further developed by Todorov, accommodates particular narratives, they seem not to be functioning with more complex stories, 'and thus far, can only be applied to one narrative' (Barthes, 1975, p. 259). As James Garvey notes in *Characterization in Narrative*:

"It should be noted that Todorov's derivational rules are implicational in nature; no plus-or-minus features are involved. Thus, the rules actually do not ascribe attributes; rather they predict 'grammatical' actions of a personage. Here the essentially plot-centered tendency of narrative grammars reasserts itself." (Garvey, 1978, p. 64)

Nevertheless, Barthes seems to be in accordance with the notion that logico-formal approaches have not been adquate, and that a semantic dimension is needed, when he states that:

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"...a purely distributional definition of units will not do: meaning must be, from the very first, the criterion by which units are determined. It is the functional character of certain segments of the story that makes units of them, hence the name 'functions', early attributed to those first units. Since the Russian formalists, [Propp, Todorov, Greimas], the practice has been to regard as a unit any segment of the story which presents itself as the term of a correlation. The 'soul' of any function is, as it were, its seedlike quality, which enables the function to inseminate the narrative with an element that will later come to maturity, on the same level, or elsewhere on another level." (Barthes, 1975, p. 244)

And he continues by adding that:

"It is a pure system: there are no wasted units, and there can never be any, however long, loose, or tenuous the threads which link them to one of the levels of the story." (Barthes, 1975, p. 245)

The reason why purely structural analyses of narrative have not lived up

to the task is encapsulated by Barthes when he argues that:

"...structural analysis showed the outmost reluctance to treat the character as an essence, even for classification purposes; as T. Todorov reminds us in his article, Tomachevski went so far as to deny character any narrative significance whatsoever, a point of view which he toned down subsequently. Without going so far as to ignore characters in his analysis, Propp reduced them to a simple typology, based not on psychology but on the homogeneous nature of the actions assigned to them by the narrative (giver of the magic object, Assistant, Villain, etc.) (Barthes, 1975, p. 256)

## 1.5    Universality of structure and the three-act paradigm

Today, the most widely used structural tool in screenwriting is the three-act paradigm.  It was first proposed within the context of Greek tragedies by Aristotle, who based his studies on Sophocles' *Oedipus Rex* (Aristotle, 1996), and was first to identify that Greek tragedies have beginnings, middles and ends.  Within the context of narrative theory it was later popularized by Syd Field in *Screenplay: The Foundations of Screenwriting* (1984a).  The three-act paradigm was expanded and revised by theorists such as Robert McKee in *Story* (1999), Linda Seger in *Making a Good Script Great* (1994), and William Miller in *Screenwriting for Narrative Film and Television* (1998) although there is an ongoing debate whether the paradigm is used in all screenplays or should be replaced by a four-act one instead (Thompson, 1999, 2003).  Jean Mandler and Nancy Johnson in a series of empirical experiments they conducted in the 80s concluded that:

> "In attempting to uncover the details of story schemata, folktales, fables, and myths can be used to great advantage.  Such stories, which stem from oral tradition, have very similar and unusually clear structural characteristics compared to many other types of prose. The reason seems obvious.  If a story is not written down but is preserved only though retelling, it must respect the limitations on memory. We assume that an orally transmitted story will survive only if it conforms to an ideal schema in the first place or has gradually attained such a structure through repeated retellings.  Thus, the structure of a folkstory must be one which has been influenced by what people can remember." (Mandler and Johsnon, 1977, p. 113)

In screenwriting, the three-act structure is not used arbitrarily; it is rather a mental construct, a framework or a schema, that has been developed empirically and is projected in a written form as a structural tool that helps authors and audiences alike to process information in distinct blocks.   Mandler and Johnson explain that:

> "We will use the term 'story schema' to refer to a set of expectations about the internal structure of stories which serves to facilitate both encoding and retrieval. People construct story schemata from two sources. One source comes from listening to many stories and consists of knowledge about the sequencing of events in stories, including how they typically begin and end. The other source comes from experience and includes knowledge about causal relations and various kinds of action sequences." (Mandler and Johnson, 1977, p. 112)

Explaining how this mental schema organizes information and a variety of functions, Mandler and Johnson add that:

> "During encoding, the schema acts as a general framework within which detailed comprehension processes take place. This framework performs several functions.  First, it directs attention to certain aspects of the incoming material.  For example, statements in the setting of a folktale (in contrast to the modern mystery story) are always relevant to later events; they warn the listener that certain facts should be kept in mind.  Second, the framework helps the listener keep track of what has gone before. It provides summary that increases the predictability of what will immediately follow.  Third, the framework tells the listener when some part of the story is complete and can therefore be stored, or is incomplete and therefore must be held until more material has been encoded." (Mandler and Johnson, 1977, p. 112)

The above does not differ from how authors organize and structure information using the three-act structure paradigm. By creating a story-world [SW] and implementing all the necessary characters, motivations, events, and structural points in the appropriate parts of the screenplay, the authors lay the grounds for what will later come to light as the story progress. Cognitive psychologist Karl Haberlandt argues that the:

> "...principal constituent of a story is the episode [an act] whose structure is akin to that of a problem solving scheme familiar from work in artificial intelligence. The processing assumption is that the story-schema not only describes the structure of a story, but that it is psychologically valid. This means that people use the story schema to encode, store, and recall, or to create a story... An episode is defined from the point of view of a protagonist who is faced with a problem and tries to solve it. The problem is triggered by events described in the beginning of the episode. Then the hero reacts to the problem, he or she formulates a goal and attempts to achieve the goal producing a certain outcome. The episode concludes with an ending which describes the protagonist's reaction to one of the events in the episode, emphasizes a certain point and thus wraps up the episode (or story)." (Haberlandt, 1980, p. 100)

The usage of a three-act structure in screenwriting instead of a five-act one as in the Shakespearean plays is associated with the understanding that structure is closely associated with memory recall and comprehension, as empirical cognitive studies have shown (Mandler and Johnson, 1977). Jean Mandler elaborates in *Stories: The Function of Structure*:

"Each of the constituents of an episode can be considered as a local topic unit in a larger macrostructure (the overall structure) of a story. When a unit [an act or scene sequences] finishes, it tells the reader that the story line is moving ahead and that the next topic has begun. Thus, the reader can use knowledge of story structure to recognize and categorize incoming sentences into their relevant topics. This knowledge is not purely schema-driven; as in all processing it must interact with the particulars of the incoming information. Since stories vary widely in how elaborately each unit is told, the reader does not necessarily know that a given unit has finished until the next has begun... The story schema would thus enable the reader to form a coherent representation of the story as a whole. The bridging information that connects the units is supplied by the schema, and does not have to be built up afresh, as presumably must be done when reading unfamiliar types of prose." (Mandler, 1983, pp. 13-14)

There are three very important observations that can be drawn from the above statement. The first observation is that there are microstructures within the macrostructure of a screenplay. This is evident in the structuring of the individual acts or scenes that most of the times are also organized with three acts. In Mandler's words:

"Nevertheless, the structure of each episode is similar and fairly simple in nature, making relatively easy for the listener to compartmentalize the story as it unfolds." (Mandler, 1983, p. 9)

The second observation is that 'plot points' are widely used as they mark a transition from one act to the next one, informing the audience that the story has now progressed. This may not be readily observable to the untrained audiences but close observation of most motion

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pictures, and the totality produced in the Hollywood engine, reveals that plot points are used empirically. The use of plot points helps the audience to organize hierarchically in its memory large quantities of information in order to follow the macrostructure of the motion picture – the story. The same applies to authors since the story is organized in distinct blocks and thus it is more easily controlled and manipulated.

The third observation is that the three-act paradigm is widely used empirically for two reasons: first, it has proven time and again that it works efficiently. And second, there is no need for alternative paradigms since the identification from the audience is instant through their repeat attendance in movie theatres. Probably this explains why Hollywood studios abide with religious intensity to screenplays structured with the three-act paradigm.

A question that can be posed here is whether we need structure in the first place at all, and why not write screenplays without any form of hierarchical organization. That is why Mandler argued in favour of a canonical form in stories:

> "...it was predicted that stories having canonical form (that is, having all the prescribed constituents in their correct sequence) would be better recalled than stories missing some constituents or presented in a mixed-up order. The result has been found in many studies, including some that have used children as young as three years of age (e.g., Glenn 1978; Thorndyke, 1977)." (Mandler, 1982, p. 10)

The findings are overwhelming with Mandler adding that:

> "A list with categorical structure, or any kind of structure for that matter, is better recalled than one with no structure at all. Similarly, better recall of a story is told in its proper sequence might be considered akin to better recall of a categorized list when the categories are presented in blocked fashion instead of randomly intermixed." (Mandler, 1982, p. 10)

The three-act paradigm can be broken down to three major and distinct dramatic units that are identified as Act I, II and III. Act I is the first dramatic unit of a screenplay and is usually referred to as the *set-up*. It is used for the introduction of the characters inhibiting the story-world, their relationships, the dramatic premise and situation of the story, the protagonist's dramatic goal, or need, and the temporal and chronological dimensions which act as the backdrop of the story (Field, 1984a; Field, 1984b). Act II is known as the *confrontation*, or development, the middle of the story. In the second act, the protagonist has to overcome many an obstacle in order to achieve her dramatic need. The third act is known as the *resolution* of the story and it is where the reinstatement of the equilibrium has, or has not been, achieved by the protagonist. Act III marks the resolution of the story but not its end. The end comes with an assertion that the equilibrium has been, or has not been, achieved and is known as the epilogue, a scene just before the end titles (Thompson, 2003; 1999). As Mandler and Johnson explain, the above description constitutes the minimum for a story to be considered as one:

> "The essential structure of a single episode story is that a protagonist is introduced in the setting; there follows an episode in which something happens, causing the protagonist to respond to it, which in turn brings about some event or state of affairs that ends the episode. The simplest story must have at least four propositions, representing a setting, beginning, development, and ending, if it is to be considered a story." (Mandler and Johnson, 1977, p. 119)

The abstract vertical structural events that hold the screenplay's spine together, and push the action into the next act are called 'plot points.' There are several major 'plot points' in a screenplay. The first one is situated in the beginning of the first act and is called the 'inciting incident', the catalyst that sets the particular story in motion. It is the major causal event that sets the story in motion, forcing the protagonist to act upon the disturbance that event has caused. The second plot point is situated towards the end of Act I; it signifies the story's transition into Act II as the hero is propelled into a new situation. The third plot point divides Act II in two distinct parts and is referred to as the 'midpoint.' And the fourth plot point is positioned at the end of Act II and signifies the transition into Act III, informing the audience that the story will soon conclude. Additionally, there are the 'plot pinches', known as 'pinches a & b' and 'pinches 1, 2, 3 & 4', which are inserted interstitially between the 'first plot point', the 'midpoint' and the 'second plot point', adding a sense of heightening pace and rhythm to the forward thrust and momentum of the story (Mckee, 1999), while

adding increased structural functionality for tighter, and often faster paced plots.

Plot points are integral not only for the progression of the story but also for the screenplay's structural organization.  Linda Seger in *Making a Good Script Great* went one step further and expanded the notion of 'plot points' identifying them in three steps:

> "Whereas a *barrier* pushes the story forward by forcing new decisions, and a *complication* pushes the story forward by leading to an anticipated payoff, a *reversal* catapults the story by forcing it to take a new direction that causes new development." (Seger, 1994, p. 68)

The first kind of plot point is the *barrier*, where the protagonist finds himself in a dead end after following a clue that didn't work.  The second is the *complication*, where the reaction from the protagonist is not immediate and the payoff happens later into the story, and the third is the *reversal*, which is regarded as the strongest of the dramatic points since it causes the protagonist to change entirely course of action because of an elaborate dramatic obstacle occurring in his story-life. (Seger, 1994, pp. 63-68)

The three-act paradigm is not always encountered in the rigid form Field proposes in the *Screenplay: The Foundations of Screenwriting,* even though this rule is rarely violated by new writers who are trying to break into the movie industry.  Usually, any leeway on the page count

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happens in the final draft of the screenplay, the shooting draft. *Syd Field* asserts that the plot points have to hit a specific page e.g. the inciting incident between pages 10 and 12, the first plot point on page 25, the midpoint on page 60, and the second plot point on page 85, for a two-hour long motion picture, stating that Act I lasts for about thirty minutes, Act II for about sixty, and Act III for about thirty (Field, 1984a).    Thompson claims that dramatic acts are not always proportional, with Act III being shorter than Act I (Thompson 2003; 1999), which is often the case in faster-paced genres, i.e. action-thrillers or action-adventures, and could be regarded as a convention of the action genre.    This happens because faster pace is needed in the resolution of the film, a tactic that is associated with the audience's identification with the protagonist and her need to achieve her goal; thus, speedier resolution is often sought, usually in screenplays where the plot drives the story forward.

However, Thompson extensively argues that the structure in screenplays is a four-act model rather than a three-act one, and bases her arguments on the problems Act II appears to have due to its length:

> "Despite the widespread influence of Field's model, there are indications that it has a problem. Manuals, screenwriters, and even reviewers, although they accept Field's timings as correct, consistently refer to the second act as protracted and difficult to write." (Thompson, 1999, p. 24)

A potential problem of the 'difficult' second act is the lack of incorporation of dramatic beats such as *pinches*. The pinches have a lesser dramatic impact onto the story; they pose, however, an important structural tool that its utilization eases the authors' navigation through the second act. Thompson continues by adding that she suspects that: '... such difficulties are traceable to the basic drawbacks of the three-act paradigm' (Thompson, 1999, p. 27). And she goes on to explain that:

> "We can, however, account more precisely for the structural dynamics of Hollywood storytelling by suggesting that the most frequent reason a narrative changes direction is a shift in the protagonist's goals. If we can account for plot structure by means of these goals, we have a schema that has some potential plausibility." (Thompson, 1999, p. 27)

And adds to the argument by saying that:

> "Instead of starting with an a priori assumption that all films must have three acts, we can instead simply study the plot patterns to be found in a sampling of Hollywood films, both from the studio era and from more recent times. What we find is striking. A great many of these films – indeed, I would contend, the bulk of them – break perspicuously into four large-scale parts, with major turning points usually providing the transitions." (Thompson, 1999, p. 27)

Concluding, Thompson refers to the:

> "... four parts of the average feature as the setup, the complicating action, the development, and the climax. This schema points up something I will elaborate shortly: the movies very often present a

crucial turning point more or less at dead center."
(Thompson, 1999, p. 28)

It seems that Thompson treats the plot points as act dividers and not as structural tools that unify dramatic blocks thematically: beginning, middle, and end. And here appears the fallacy in Thompson's logic as she treats the midpoint as another plot point of the kind that changes the hero's course once again, concluding that a screenplay has four acts instead of three.

Besides, the functionality of the midpoint is different from the one Thompson presents. It's a structural tool that signifies the 'shift in gear' from a passive protagonist to an active one; a call to arms in other words – the hero's last chance to react to the disturbance that has been inflicted to his world. In regard to the midpoint, Thompson proposes that: '... the midpoint is usually at least as structurally important as the other turning points' (Thompson, 1999, p. 31). This statement is true, but plot points do not defer in importance. They are all associated with the protagonist and the change in his fortunes, one way or another, but they retain their functionality as structural tools nonetheless.

But Thompson also appears to be misinterpreting goals with dramatic needs, desires, and the satisfaction of inner conflicts, in her contention to argue against the three-act paradigm by saying that each act can

be distinguished from the other by the shift in the protagonist's goals. The argument here is that the protagonist's goal remains the same throughout the story, no matter how many sub-goals are added to his quest, either as obstacles that keep him from achieving his primary goal very early, or in the form of sub-plots running parallel to the main story. Such sub-goals remain, however, thematically tightly interconnected with the primary goal, and so the hero has to attain these in-between steps in order to achieve his primary goal.

However, Thompson's flawed logic of the plot points as the dividers of whole acts can be extended to the inciting incident, which can be asserted that it also divides the first act in two asymmetrical parts, and the pinches which can be slicing the second act into eight distinct ones. But whatever fragmentation is achieved through argumentation, and however different stories appear to be on their surface, or in their plot, they seem to be sharing a common underlying structure of beginning, middle, and end:

> "...the contention of all story grammars is that stories have an underlying, or base, structure that remains relatively invariant in spite of gross differences in content from story to story." (Mandler, 1984, p. 22)

Thompson's above contentions are based on interpretive observations drawn *a priori* from already filmed scripts. Although I explain in chapter two what the problem of interpretive approaches lacking empirical

dimension is I feel I need to summarize the basics here. For example, by analyzing already written screenplays, universal rules can be established that, supposedly, apply to all screenplays. Starting from the specific and moving to the general, or universal, and justified by repetition, is a common inductivistic fallacy that often leads to unsubstantiated theories that lack verification of their propositions and empirical application. The Popperean method which is summarized below, and which could benefit the field of narrative analysis, presupposes an already established theoretical framework of principles upon which researchers can abstract and expand already- formulated assertions. Thus, deeper theories can be formulated with a procedure from the general to the specific, without the fear of proliferating un-testable theories lacking empirical dimension.

Based on Popper's step-by-step process for the evolution of knowledge, as it was expressed in *The Logic and Evolution of Scientific Theory* (Popper, 2010, pp. 3-22), and having already established an un-falsified theoretical framework, the formulation and expansion of new theories morphs into a problem-solving model consisted of three steps. First, the identification that a *problem* has arisen. Second, the *attempted solutions* to solve the problem, and third, the *elimination* of any unsuccessful solutions.

Thus, an un-falsified theory can be expanded through the identification of its problematic statements. An attempted effort is made in order to eliminate the problematic statements through the proposition of tentative assertions that also have to be un-falsified in return in order to be embedded into the existing theory. As I shall explain in chapter four, this three-step problem-solving model, along with the *plot-algorithm* [PA] mechanism, that through a transformation process of trial and error eliminates any unsuccessful attempts and presents the successful ones onto the surface structure, are two powerful tools in the hands of the author for the construction of complex narratives.

The above method can also be applied to specific screenplays as a model for the identification of plot inconsistencies, a process which I explain in depth in chapter five. For the sake of the argument, I will say that the first draft of a screenplay can be regarded as problematic - 'a work in progress' - as more often than not it will contain plot holes and logical inconsistencies. By identifying that the first draft is problematic we have identified a potential problem. Setting out to solve the problem, the author tries several tentative solutions to the plot problems at hand, and by eliminating the unsatisfactory ones, proceeds to the implementation of the justified solutions. By finishing yet another draft, the author, through feedback-seeking sessions, can also identify the second draft as problematic, and following the above

procedure *ad infinitum,* he eliminates all plot inconsistencies until the screenplay can be regarded as finished.

The hierarchical organization of a screenplay is divided into three distinct structures: deep, intermediate, and surface structure.  By deep structure I refer to those dramatic components that are fundamental to all stories e.g. the characters and their goals.  In chapter four, I shall explain in depth why the dramatic goal appears to have a universal property, thus, it is considered as essential to all modes of story-telling. By intermediate structure I refer to the dramatic components that, even though are not universally encountered in all stories, their presence remains of great importance.  Finally, surface structure is the way action is depicted in written form; action that stems from the inner psychological need of the characters to achieve their goals.

When it comes to surface organization there are three tools employed for the projection of the values of the deep and intermediate structures onto the surface structure.  These are the *beat,* the *scene*, and the *scene sequence* (McKee, 1999).  Within a scene, the *beat* is the smallest element of surface structure, and is regarded as the instantaneous exchange of information through an action-reaction process between the characters.  A *scene* is a spatio-temporal construct where the conflict is projected through action and dialogue on a continuous time and space strip that serves different functions.  A

scene builds up upon the succession of several *beats*. A *scene sequence*, the next largest surface structural tool, is built upon the succession of different scenes linked together under a common theme that may not be clear on the outset, and certainly not before the *scene sequence* unfolds in its entirety. As I argued above, the largest dramatic units of surface structure are the three Acts, all linked together by a thread of *scene sequences* and individual *scenes,* out of which the story emerges onto the surface structure through the facilitation of the hero's goal-path. Schematically, this organizational hierarchy is shown in figure [1.3] below:



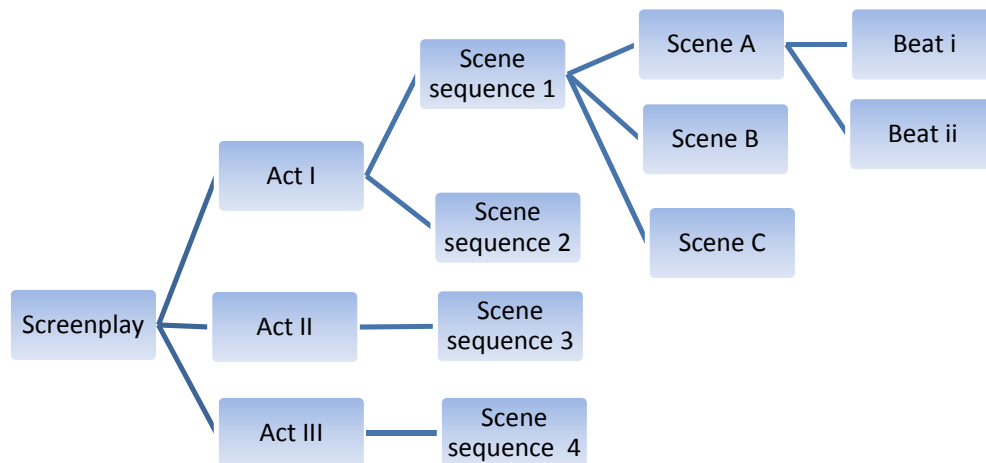Figure [1.3] The relation between acts, scene sequences, individual scenes and beats

Mandler and Johnson, 1977, p. 117

Here lie the reasons why *Screenplectics* is a stronger alternative to the theories described before. First, it would be feasible to expand its theories and built upon the already established knowledge of its existing propositions, providing this way a deeper narrative analysis

theory. Second, *Screenplectics* provides answers to both fundamental questions I put forth in the beginning of this chapter. Third, the model's assertions appear to be widely applicable as the two of its most important contentions appear to share an objective status: i) a structure with beginning, middle and end is identifiable by different cultures, and ii) goal-orientation in stories is of fundamental importance. Fourth, *Screenplectics* is the only model that structurally incorporates character under a holistic view, without putting the emphasis on a single aspect, i.e. story grammar over structural organization over semantics over the interrelations of deep-rooted story dynamics, interlinking everything under a common umbrella. *Screenplectics* has the potential to lead to a better understanding of narrative and screenplays and to a better understanding of films and story-telling in general.

## 1.6    Some cognitive aspects of Screenplectics

As I explained above, narrative schema is a probabilistic model of interpretation of how stories are understood from the audiences. However, the exact mechanism is yet to be understood, and as Branigan states, the strength of narrative in film: '... rests on our ability to create a three-dimensional world out of two-dimensional wash of light and dark' (Branigan, 1992, p. 33). There is no argument that screenplays, and their three-act paradigm, are mental constructs of

human ingenuity. Ideas and concepts conceived in our brains are first designed schematically on paper or computers then are transformed into tangible constructs. There is no difference between processes encountered in industrial product development and narrative, especially of the written or filmic form. And so, process, technique, method, and logical continuity are all required for the production of a screenplay and its eventual transformation into a motion picture.

A technique widely used in screenwriting is *benchmarking*: the order of the appearance of events, actions and characters on the screen set expectations to the audience by shaping its inferences of what might happen next. In cognitive psychology, the audience's ability to remember information easier when it is presented earlier in a story, instead of it appearing in later stages, is called the *primacy effect* (Glanzer and Cunitz, 1966). Benchmarking allows the audience to perceive everything it experiences about the story-world as granted, unless they are told otherwise. The story-world, an accumulation of events and characters, follows predefined rules set by the author. As Branigan explains:

> "In talking about story, we often refer to certain events which surround a character, events which have already occurred, or might occur in a particular manner, in a certain sequence and time span, and so forth. We understand such events as occurring in a 'world' governed by a particular set of laws. I will refer to that imagined world as the diegesis. The spectator presumes that the laws of such a world allow many events to occur (whether

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or not we see them), contains many objects and characters, contains other stories about other persons, and indeed permits events to be organized and perceived in nonnarrative ways... The diegesis, then, is the implied spatial, temporal, and causal system of character – a collection of sense data which is represented as being at least accessible to a character." (Branigan, 1992, p. 35)

Marie-Laure Ryan argues that audiences tend to understand story-worlds by projecting onto them knowledge they have about reality, making only the necessary adjustments dictated by the parameters of the story, or as presented by the text. This process is called the *principle of minimal departure*; it allows the spectators to identify with characters and events, and accept fantastic setups that would not otherwise be believable by creating mental benchmarks:

> "...the principle of minimal departure dictates that the world of the text is to be understood as complete, and identical to the actual world except for the respects in which it deviates from that model, either explicitly or implicitly, both in its own right and by virtue of any genre conventions it invokes." (Ryan, 1991, p. 51)

Ryan adds that the principle:

> "...presupposes that fictional worlds, like the possible worlds postulated by philosophers, are ontologically complete entities: every proposition *p* is either true or false in these worlds. To the reader's imagination, undecidable propositions are a matter of missing information, not of ontological deficiency." (Ryan, 2005, p. 447)

A good example of benchmarking, and of the application of the *principle of minimal departure,* can be sought in cartoons, superhero,

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or elaborate sci-fi motion pictures, where characters and setups have no direct correlation to the world we inhibit.   The underlying dynamics in a screenplay system deliver the necessary dramatic information to the audience.   So much in fact that Todorov sought to explain postulating that:

> "…every literary text functions in the manner of the system; which implies that there exist necessary and not arbitrary relations between the constitutive parts of the text." (Todorov, 1957, p. 74)

There is no argument that the examination of a screenplay as a system is metaphorical.  Systems, usually, are autonomous, meaning that once they have been designed and are ready to function, they run autonomously without intervention from a human, apart from handling or quality control.  With the inclusion of the author as part of the system, the metaphor of systemic approach moves one step beyond.  For a system to function properly there must be an underlying procedure which regulates it in its entirety and produces meaningful outcomes. So the analogy of chess that consists of finite number of chess pieces, sixty-four squares and a set of base rules is very much applicable here. What gives emergence to an infinite number of chess games is a basic algorithm (the system's underlying procedure) that interlinks the utilization of chess pieces, their spatial coordinates on the chess board, and the possible moves permitted by a set of base rules.   A similar example, albeit a more abstract one, can be found in T.S Eliot's (1997) *objective correlative* for the elicit of emotions to the audience through

the right combination of a set of underlying narrative elements: images, character actions and motivations, scene descriptions, etc.

I shall call the underlying procedure of a screenplay system the *plot algorithm* [PA], a tool with distinct and infinite generative capabilities. A basic diagram of the relations between various levels of structure and the [PA] is shown in figure [1.4]. [D.S] denotes the deep structure, [I.S] the intermediate structure, [S.S] the surface structure, and [P.A] the plot algorithm mechanism.

Figure [1.4] Deep, intermediate and surface structures and the plot algorithm

The [PA] transforms the information of the story-world, that has been configured by the author on core (kernel) dramatic components, in the deep structure to the appropriate semantic information that is relative to the intermediate structure. In the subsequent chapters, I refer to this as the configuration or parameterization process of the story-world, i.e. who the characters are, what do they like, their needs, goals, and conflicts, the spatio-temporal dimensions of their fictional worlds, the theme, and any other information that is needed for the

story to function on a logical and semantic level. In the intermediate structure, the dramatic information is enriched by the relations between the characters; through them conflict is generated. Finally, the [PA], taking into consideration the story-world's initial parameterization and the characters' interrelations, transforms all relevant information into direct actions, and projects them onto the surface structure. In other words, parameterization of a [SW] belongs to the deeper level, the interrelations between the characters to the intermediate level, and the direct actions of the characters to the surface level.

In each level, complex differential processes take place between the information added to the system by the author and the participating components, both internally and externally. Internally, the screenplay system, based on the initial story-world parameterization, generates new information that is associated with characters, actions and events, all following the story's inner logic and forward spatio-temporal progression. Externally, the screenplay system generates new information in conjunction with its larger engulfing environment, part of which the author must be regarded. Sheila Johnston explains that these multifaceted and bi-directional relations are the screenplay's inner dynamics,:

> "On one hand, the work is subject to its own tight internal logic... Characters act consistently; the narrative 'obeys a principle of non-contradiction'...

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> Actions follow predictable consequences... 'Everything holds together', that is every detail, every action will play some – preferably more than one – functional role in the unfolding of the narrative, though ideally this functionality should not be too obvious. Crucially, all the main enigmas posed in the course of the story must be resolved by the end... On the other hand, the work depends on a set of external relationships, its position within a grid of other cultural texts..." (Johnston, 2007a, p. 518)

Roland Barthes in *Introduction to the Structural Analysis of Narratives* (1996) attempted to create a model that could be applied to different narratives, however, as Johnston notes:

> "In the opening scenes of S/Z, however, [Barthes] distances himself from such an attempt 'to see all world stories... within one structure, now holding it to be 'a task exhausting'... as it is ultimately undesirable." (Johnston, 2007a, p. 518)

Barthes thought that, by forcing a text into 'a great narrative structure', the text loses its difference. However, all forms of narrative are based on a model that is not a structure on itself, but includes base rules and principles, the notion of hierarchical structure, and a mechanism that infuses life into the narrative system. The theoretical foundation for the better understanding of the holistic nature of *Screenplectics* is complexity theory, the theory that studies the complex and puts the emphasis both on the interrelation of the components and on the dramatic outcome that is produced through their semantic interactions.

## 1.7    Understanding the complex

Complexity theory has had significant impact on a great variety of scientific fields i.e. chemistry, physics, biology, and chaos theory. In the recent years it has departed from these originating fields and has been applied in other areas. Physical chemist Ilya Prigogine and philosopher Isabelle Stengers (Prigogine and Stengers, 1984) have made substantial contributions to the holistic nature of systems in their nominal work *Order Out of Chaos*. In information theory, complexity originated from the work of Ray Solomonoff (1960), founding father of the algorithmic information theory, which was later developed by Andrey Kolmogorov (Kolmogorov, 1965) and Gregory Chaitin (Chaitin, 1966). In sociology, John Urry (Urry, 2003) and David S. Byrne (Byrne, 1998) sought to understand the implications of complexity theory in social sciences. In organizational, management and strategic studies, complexity theory can be found in the works of Phillip Anderson (Anderson, 1999), Robert Axelrod and Michal Cohen (Axelrod and Cohen, 2000), Jan W. Rivikin (Rivikin, 2000), and Ralph D, Stacey, Douglas Griffin & Patricia Shaw (Stacey *et al*, 2000) among others, where corporations or organizations are being examined under holistic perspectives, i.e. a large number of interrelated components that affect the larger system and its output.

Complexity economics is the application of complexity theory to economics; several studies have been carried out at the Santa Fe

Institute, a theoretical and independent research institute founded in 1984 by a group of scientists, including Nobel laureate physicist Murray Gell-Mann, and is dedicated to the study of complex adaptive systems such as physical, biological, computational and social systems, i.e. macro-economics, the stock market, etc. Studies on complexity economics can be found in the work of David Collander (2000), and John H. Miller and Scott E. Page (Miller and Page, 2007) among others. In the general systems theory, biologist Ludwig von Bertalanffy sought to understand how complex order arises (von Bertalanffy, 1955), and opposed reductionism, seeking to understand instead 'the relationships between the parts which connect them to the whole' (Larsen-Freeman and Cameron, 2008, p. 3). In regard to research on open systems, systems with a lots of components that are in constant flux with their environments and are expanding by incorporating new information such as traffic signalling systems and the weather, among other, Larsen-Freeman and Cameron explain that:

> "Developments in the 1980s shifted to the search to understand the increasing order and structure in open systems. Haken and Kelso worked on the relationship between components of a system which gives rise to a new macroscopic order not present in any of the components, an interdisciplinary study called 'synergetics'." (Larsen-Freeman and Cameron, 2008, p. 3)

In philosophy, the holistic notion of systems was studied by Mario Augusto Bunge (Bunge, 1979), while scholars like Francis Heylighen (Heylighen *et al*, 2007), Paul Cilliers (Cilliers, 1998) and Carlos

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Gershenson (Gershenson and Heylighen, 2005; Gershenson, 2010, 2002) have studied complexity extensively. In linguistics, complexity theory has been recently applied by Diane Larsen Freeman and Lynne Cameron (Larsen-Freeman and Cameron, 2008) and de Bot, Lowie and Verspoor (de Bot *et al*, 2007, 2005,) for the study of second language acquisition. Other influential bibliography on complex systems written for lay audiences can be found in the work of physicist Murray Gell-Mann's (1995) *The Quark and The Jaguar: Adventures in the Simple and the Complex*, and computer scientist John Holland's (1995) *Hidden Order: How Adaptation Builds Complexity* and (1999) *Emergence: From Chaos to Order*.

In psychology, Michael Spivey has developed a dynamic view of the mind, called 'continuity psychology' (Spivey, 2007), and aims to convince cognitive psychologists of the inadequacies of the computer metaphor of mind. The field of cognitive psychology has been inspired by this analogy between symbolic computing of the mind and the operation of computers, especially in their high-level characteristics (Serra and Zanarini, 1990, p. 8), i.e. holistic behaviour of the mind that is constituted of a great variety of interrelated components. Herewith, a similar analogy is appropriated by approaching the screenplay as a complex system, seeking a symbolical representation for a *complex screenplay system* [CSS], where the emphasis is put on the semantic interrelation of its various components and its non-linear dynamics. The

concept of non-linear dynamics was developed by the French mathematician Henri Poincare and examine systems where the output is significantly larger than the sum of their input, i.e. characters, their motivations, and their actions (input) can generate (dynamics) stories (output) which have a much larger informational capacity than the sum of the information that was originally implemented into the system individually through the initial configuration of the story-world components.

As I mentioned before, the best suited theoretical framework for the study of dynamical, complex, non-linear, open and emergent systems that process lots of information is complexity theory, and it will hopefully help us to understand Complex Screenplay Systems better.  As to the applicability of complexity theory as the appropriate framework, the realization stems from the fact that a work of narrative incorporates a vast number of narrative elements that, at first glance, appear to be disjointed.  Through the addition of the semantic dimension, complexity theory has the capacity to bring such different narrative elements together and explain how they function synergistically under a common umbrella.  *Screenplectics* breaks away from the narrow approaches of structuralism by taking old ideas and using them in new ways.  As economists and complexity theorists Miller and Page beautifully remark:

> "Such an approach is not without risks, for surely some of the new structures that we build will fall; but others will stand and inspire." (Miller and Page, 2007, p. 58)

*Screenplectics* must be judged on whether it expands the current knowledge in its narrative field. I am of the belief that *Screenplectics* offer a deeper insight of the intricate dynamics of narrative along with an explanation of what we seem to be missing all along - the mechanism that shapes its foundation. Notwithstanding this, Miller and Page argue:

> "Tools need to be judged by their ability to enhance the scientific enterprise; theories need to be judged by how well they are able to improve our understanding of the world around us, and not by what tools we used to derive them." (Miller & Page, 2007, p. 60)

An in-depth examination of the implications of complexity theory in narrative theory and screenwriting is provided in chapter three, and a thorough analysis of the system's dynamics in chapter four. However, a discussion on method has to precede the analysis of dynamics, as in chapter two, where arguments are presented on the disadvantages of other methods of inquiry that have not produced adequate knowledge.

**1.8    Minor elements of justification and historical data**

Throughout this research I will be referencing a string of successful films that utilize the three-act structure paradigm whether they were financed, produced or distributed by a Hollywood studio or by an independent entity.  Each film is brought as an example in order to emphasize the arguments presented in various parts of the thesis. However, before proceeding to the detailed presentation of the historical data for the referenced films I think it is appropriate to define the terms of *mainstream Hollywood films*, *independent* or *arthouse films* and *genre films*.  A good deciding factor for such a distinction is the source of financing and the channels of distribution used to deliver the film to the cinemas.

Mainstream Hollywood films, besides the fact that they all utilize a clear three-act structure and have a substantial budget of more than $100 million dollars, they are financed, produced and distributed through an established major Hollywood studio regardless or not such a studio is the sole financier or whether the financing is a product of partnerships. Such partnerships may include hedge funds, investment funds and tax relief funds (Epstein, 2010; Dale 1997).  Mainstream films are the financial backbones of the Holllywood of film-making machine since they are responsible for the majority of the studios' revenue stream (Epstein, 2010).  A typical source of financing for *independent* or

*arthouse* films is from independent investors who are seeking tax reliefs through their investments in film projects. The *independent* or *arthouse* category also includes films, in terms of financing and production, produced by "mini-major studios" with their budgets ranging between $30 and $50 million dollars (Dale, 1997). *Independent* or *arthouse films* may get distribution by major Hollywood studios as is the case with the David Fincher-directed *Se7en* and are, typically but not always, the kind of motion pictures that attract the majority of the commendations in film festivals and awards ceremonies. Finally, *genre films* are specialty films that are made for a niche market with low budget horror and action films being the most prominent examples of this business model. *Genre films* are usually produced by the major studios' specialty film divisions having budgets ranging from $5 to $30 million dollars (Dale, 1997) and are often characterised by thin plots and characterization.

In the *Major Hollywood studios* category are the following (Dale, 1997):

- Sony Pictures Entertainment and its affiliate Columbia Pictures with Sony Pictures Classics being its independent arm and Tristar Pictures and Screen Gems being its genre films branches. There is also Sony Pictures Animation that produces the studios' animation projects.

- Warner Brothers Entertainment includes Warner Brother Pictures, DC Entertainment and Warner Brother Animation and independent labels such as New Line Cinema, Castle Rock Entertainment and HBO Films.

- The Walt Disney Company includes Walt Disney Pictures and Pixar for all the major animation projects and Marvel Studios and Lucasfilms for other mainstream projects. Its independent arm is Touchstone Pictures.

- NBC Universal includes Universal Pictures with Focus Features, Working Title Films and WT$^2$ Productions being the independent/arthouse arms.

- The Fox Entertainment Group includes 20th Century Fox and Fox Searchlight as its independent arm.

- Finally, Viacom/Paramount Motion Pictures Group includes Paramount Pictures, Paramount Vantage as its independent branch, Paramount Animation, MTV Films and Nickelodeon Movies.

The "mini-majors" are companies with a status bigger than that of a production company but without the financial clout or historical background of a major Hollywood studio. These companies have rolling credit facilities for the financing of motion pictures but lack the distribution capacities of major studios (Epstein 2010, Dale 1997). Often the motion pictures produced by the "mini-majors" are distributed through the major studios. Mini-major companies are (Manis, 2013):

- CBS Corporation and CBS Films.

- Reliance Entertainment which includes Dreamworks, Dreamworks Animation, Gaumont Films.

- Lionsgate Entertainment Corporation includes Lionsgate Films and Summit Entertainment.

- MGM Holdings includes Metro-Goldwyn-Meyer and United Artists.

- Relativity Media and its genre films arm Rogue Films.

- The Weinstein Company and its genre films arm Dimension Films.

The films that I will be referencing throughout this research along with their historical data are shown below (source IMDB.com):

- *Die Hard* (1988), directed by John McTiernan, written by Jeb Stuart and Steven E. de Souza, produced by Joel Silver and Lawrence Gordon, with Bruce Willis and Alan Rickman. Budget approx. $28m, US box office: approx. $80m, Worldwide box office: $137m (including US). Financed and distributed by 20th Century Fox. Referenced for its structure, theme and back-story exposition.

- *The Usual Suspects* (1995), directed by Bryan Singer, written by Christopher MacQuarrie, produced by Michael McDonnell and Bryan Singer, with Gabriel Byrne, Pete Posthlewaite and Kevin Spacey. Budget approx. $6m, US box office: approx. $23m. Financed by Bad Hat Harry Productions, Inc. and Rosco Film GmbH, released by Gramercy Pictures. Referenced for purposefully not including important story-world narrative details in order to maximize the effect of the twist at the end.

- *Raiders of the Lost Ark* (1981), directed by Steven Spielberg, written by Lawrence Kasdan, produced by Frank Marshall, with Harrison Ford and Karen Allen.  Budget approx. $18m, US box office: approx. $242m, Worldwide box office: approx. $384m (including US). Financed Lucasfilm Ltd., released by Paramount Pictures.  Referenced for foreshadowing and paying-off.

- *Back to the Future* (1985), directed by Robert Zemeckis, written by Robert Zemeckis and Bob Gale, produced by Bob Gale and Neil Canton, with Michael J. Fox and Christopher Lloyd.  Budget approx. $19m, US box office: approx. $197m, Worldwide box office: approx. $350m (including US). Financed and distributed by Universal Pictures. Referenced for back-story exposition.

- *Angels & Demons* (2009), directed by Ron Howard, written by David Koepp and Akiva Goldsman, produced by Brian Grazer, Ron Howard and John Calley, with Tom Hanks and Ewan McGregor.  Budget approx. $150m, US box office: approx. $133m, Worldwide box office: approx. $485m (including US). Financed by Columbia Pictures, released by Sony Pictures. Referenced for holes in the narrative logic.

- *Citizen Kane* (1941), directed by Orson Welles, written by Herman Mankiewicz and Orson Welles, produced by Orson Welles, with Orson Welles and Agnes Moorehead.  Budget approx. $680k, US box office: approx. $1.5m. Financed and distributed by RKO Radio Pictures. Referenced for holes in the narrative logic.

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- *The Matrix* (1999), directed by Andy and Lana Wachowski, written by Andy and Lana Wachowski, produced by Joel Silver, with Keanu Reeves and Lawrence Fishburn.  Budget approx. $63m, US box office: approx. $171m, Worldwide box office: approx. $203m (not including US). Financed by Warner Brothers Pictures in association with Village Roadshow Entertainment and Groucho II Film Partnership, released by Warner Brothers and Roadshow Entertainment.  Referenced for the suspension of disbelief.

- *Jurassic Park* (1993), directed by Steven Spielberg, written by Michael Crichton and David Koepp, produced by Kathleen Kennedy and Gerald R. Molen, with Sam Neill, Richard Attenborough and Jeff Goldblum.  Budget approx. $63m, US box office: approx. $402m, Worldwide box office: approx. $557m (not including US). Financed by Universal Pictures, released by Universal Pictures and United International Pictures. Referenced for holes in the narrative logic.

- *The Reader* (2008), directed by Stephen Daldry, written by David Hare, produced by Anthony Minghella, Sydney Pollack, Redmond Morris and Donna Gigliotti, with Kate Winslet and Ralph Fiennes.  Budget approx. $32m, US box office: approx. $34m. Financed by The Weinstein Company, Mirage Enterprises and Neunte Babelsberg Film, released by The Weinstein

Company and Alliance. Referenced for trait repetition and theme.

- *The Shawsank Redemption* (1994), directed by Frank Darabont, written by Frank Darabont, produced by Niki Marvin, with Tim Robins and Morgan Freeman.  Budget approx. $25m, US box office: approx. $28m, Worldwide box office: approx. $58m. Financed by Castle Rock Entertainment, released by Columbia Pictures and Polygram Film International. Referenced for foreshadowing and paying-off.

- *The Dark Knight Rises* (2012),directed by Christopher Nolan, written by Christopher Nolan and Jonathan Nolan, produced by Christopher Nolan, Charles Roven and Emma Thomas, with Christian Bale, Tom Handy and Gary Oldman.  Budget approx. $250m, US box office: approx. $448m, Worldwide box office: approx. $1.084b. Financed by Warner Brothers, Legendary Pictures and DC Entertainment, released by Warner Brothers, Columbia Tristar and Roadshow Entertainment. Referenced in comparison to plot and action schemas.

- *As Good As It Gets* (1997), directed by James L. Brooks, written by Mark Andus and James L. Brooks, produced by James L. Brooks, Bridget Johnson and Kristi Zea, with Jack Nicholson, Helen Hunt and Greg Kinnear.  Budget approx. $50m, US box office: approx. $147m, Worldwide box office: approx. $132m (not including US). Financed by Gracie Films, released by Columbia Tristar, Tristar

and Sony Pictures.  Referenced as an example of character modalizer.

- *Kill Bill 1* (2003), directed by Quentin Tarantino, written by Quentin Tarantino, produced by Lawrence Bender, with Uma Thurman and David Caradine.  Budget approx. $30m, US box office: approx. $70m, Worldwide box office: approx. $180m.  Financed by Miramax Films, released by Miramax Films and Alliance Atlantis.  Referenced for character motivation in the narrative present.

- *Taken* (2008), directed by Pierre Morel, written by Luc Besson and Robert Mark Kamen, produced by Luc Besson, with Liam Neeson, Famke Janssen and Maggie Grace.  Budget approx. $25m, US box office: approx. $145m, Worldwide box office: approx. $226m.  Financed by EuropaCorp, M6 Films and Grive Productions, released by EuropaCorp and 20th Century Fox. Referenced for subgoal attainment before goal attainment.

The reason I have selected the above films to reference instead of quoting directly from screenplays is three-fold.  The first reason is that the referenced films are being used solely as *ad hoc* examples in support of the arguments presented and not for the formulation of narrative theories of inductive nature with general or universal applicability.  The second reason lies with the analysis of screenplays, and their structure, in hindsight, after they have been written, that led

Syd Field (1984a) to the formulation of interpretive theories through justification of repetition. The same applies to all the subsequent analyses from Robert McKee and Linda Seger that led them to the inference of the common rules and principles of screenwriting. However these approaches are justifiable empirically, in their core they remain interpretive, resembling attempts to infer the blueprint designs of a skyscraper after it has been built and with the scaffolding removed. A more in-depth argument on the pitfalls of induction and abduction is presented in chapter two.

# Chapter Two

**Furthering our knowledge**

## 2.1    Problems arising from methodology

Yet the question remains: how *Screenplectics* can benefit from the application of interpretive inductive theories lacking empirical correlation?  The main objection here is aimed at Propp and Todorov who, although they may have had good intentions in their attempts to unravel the mysteries of narrative, built their theories by interpreting pre-existing narrative works without attempting to confirm them empirically. This suggests that universal theories were sought to be discovered from *ad hoc* phenomena that were only encountered in a very narrow kind of stories.

The current trend in the field of narrative analysis, and the problem that emerges from this practice, is coherently summarized by a statement made by Bordwell in *Making Meaning*:

> "Perhaps, then, a theory merely offers insights which can guide the critic's interpretation.  This formulation sounds appealing, and many practicing critics would probably accept it.  Once again, though, this makes the relation of theory to the work only contingent." (Bordwell, 1989, p. 6)

 One of the problems of purely interpretive inductive theories is the creation of conditional propositions that often have no direct correlation with the field of practice, and without subsequently yielding any objectivity.  Interpretations lack validity because they are not

based on evidence and do not provide explanations on why what is conjectured has validity in itself.  In relation to this, Bordwell adds that:

> "An unusually wise critic, wholly innocent of theory, might be brimful of insights which could yield intriguing interpretations.  And once again, this view surrenders any concern for the theory's claims to truth.  From this perspective, a critic could use the I Ching, numerology, astrology, or any fanciful system as long as it generated hunches that led to acceptable interpretations." (Bordwell, 1989, p. 6)

However, Popper explains what is wrong with this approach in *The Myth of the Framework:*

> "The inductivist approach operates with the idea of instruction from without.  But the critical approach allows only instruction from within - from within the structure itself.  In fact, I contend that there is no such thing as instruction from without.  All observations are theory-impregnated.  There is no pure, disinterested, theory-free observation." (Popper, 1994, pp. 7-8)

What can be derived from the above remark is that new facts, or insights, on any theory that has an empirical dimension are not inferred inductively or interpretively by observation but are derived through a method of trial and the elimination of error.  But as I shall show next, for this to happen the initial foundations, or structure, of the theory must have already been established.

### 2.1.1 The importance of universal patterns

An integral step of the process is to identify the universal features of the narrative model that are present in all narrative forms. This will set the initial foundations of an approach that will allow subsequent research efforts to move away from notions of behaviourism that is encountered in some aspects of film theory. The concept of structure can be understood as an internal property of the system in order to classify information, either generated internally or acquired externally. The internal information classification points towards the system's self-regulatory capacity and it can be regarded as the second structuralist principle. Complexity philosopher Paul Cilliers argues that:

> "This process [of information classification] is neither passive reflection of the outside, nor a result of active, pre-programmed internal factors, but the result of a complex interaction between the environment, the present state of the system and the history of the system." (Cilliers, 1998, p. 89)

It seems that structure is a universal property of all systems, narrative systems included, without which they would be highly unstable and difficult to understand or controlled. Levitt (1971) in *A Structural Approach to the Analysis of Drama* disagrees with the notion of a universal model with general applicability since he regards paradigmatic classifications only useful for generic criticism. Levitt seems to be putting the importance on the analysis of individual plays as wholes without however, explaining what such analyses reveal in

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relation to the underlying principles of narrative. However, Levitt states that in order to achieve understanding of the whole we 'must comprehend the relations and functions of all the parts in the play.' (Levitt, 1971, p.12)

Levitt even recognizes the existence of internal structures in a play, i.e. characters, spatio-temporal organization, structure of scenes, actions and events, going beyond the threadbare argument that only plot has structure. Despite this recognition, Levitt deems these internal structures as unimportant to be further understood as parts of an ever encompassing structure. Nevertheless, internal structures must be seen as a process that can be modified in order to improve performance, as Gouldner conveys:

> "Fundamentally, the rational model implies a 'mechanical' model, in that it views the organization as a structure of manipulable parts, each of which is separately modifiable with a view to enhancing the efficiency of the whole. Individual organizational elements are seen as subject to successful and planned modification, enactable by deliberate decision." (Gouldner, 1959, p. 405)

The transition from silent motion pictures to the ones of the present day was achieved through an improved internal performance that was made possible thanks to the increased coherence that was added in the screenplay due to the logical organization and continuity of its internal structures. This shifted the importance from fixed scenes to the

screenplay itself and the linear, or non-linear, forward progression of

the story. As Buckland explains:

> "The narrative codes and techniques of film, together with the continuity script, reified the filmic text by fragmenting it into quantifiable units and reconstructing it, according to a rigorous system of rules of combination, into an efficient, rationalised form." (Buckland, 1991, p. 199)

The establishing of universal patterns will allow a theory to break away

from approaches verging on purely interpretive procedures. Theories

that have been developed as such e.g. cognitive film semiotics, post-

modern literary and narrative theory, or interpretive film theory, lack an

empirical dimension and thus are unable to produce tangible results

that can be applied in practice, and not allowing this way to be tested

empirically for their validity. Interpretive theories find it difficult to

extend to practical application and persist to exist as abstract

constructs in perpetuity, remaining incomplete and, therefore, never

succeeding in developing an empirical dimension that could be

utilized by practitioners.

### 2.1.2 Avoiding pitfalls of abduction and interpretation

It has to be recognised from the outset that inductivism, in general,

could be a powerful and insightful way for the formulation of new

ideas. However, references to subjective statements, such as 'beliefs'

or 'interpretations', need to be replaced with objective ones that can

be justified and empirically tested. In disciplines with empirical dimensions this can be achieved by 'test statements', or direct experiments, and in disciplines lacking such properties by putting forward 'explanatory universal theories' (Popper, 1979, p. 3). As Popper notes in *Objective Knowledge*, the commonsense view that the sun will rise tomorrow because it has done so many times in the past, or regularities that are justified because of the initial observations that are responsible for their genesis gave rise to the way of justification through repetition that we call *induction* (Popper, 1979, p. 3). This in no way differs from how screenwriting, and narrative practice, has evolved through justified repetition. However, due to the empirical extension of narrative by practitioners, and the continuous application of its propositions for the creation of stories, this has served as a kind of testing ground, and the subjective statements have been transformed into objective ones.

Often people associate, or confound, the direct experience they derive through their interactions in the physical world with a sense of belief in the accumulation of knowledge or their cognitive understanding. Hume referred to the association of ideas through repetition that gives people great confidence in what they think they know as a 'custom of habit' (Popper, 1979, p. 4). And it seems that this is where the problem of induction lies: the transition from singular

subjective observations, or interpretations, to universal statements through unjustified repetition, such as hypotheses or theories.

As I argued in [1.8], and although Syd Field's three-act structure paradigm has attained an objective state through extensive empirical application, the paradigm's original formulation remains an interpretive approach of induction.   In Syd Field's words:

> "A screenplay is about a person, or persons, in a place, or places, doing his, or her, 'thing.' I saw that the screenplay has certain basic conceptual components common to the form.  These elements are expressed dramatically within a definite structure with a beginning,  middle and end.  When I reexamined the 40 screenplays submitted to our partners - including the Wind and the Lion, Alice Doesn't Live Here Anymore, and others - I realized they all contained these basic concepts, regardless of how they were cinematically executed.   They are in every screenplay." (Field, 1984a, pp. 3-4)

Such interpretive attempts do not explain the deeper complexities of the narrative process neither they have provided any answers the two fundamental questions posed in chapter one.   As Popper puts it:

> "... no matter how many instances of white swans we may have observed, this does not justify the conclusion that all swans are white." (Popper, 2002, p. 4)

But an attempt to justify an interpretive statement through a principle of induction would allow inductive inferences to be put into logical forms.   However, a generalization of such principle into a universal

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statement of higher order is still needed. And thus, such an attempt would fail under the weight of its own fallacy since it leads to a Gödelian meta-system of infinite regresses: in order for the initial theory to be justified certain assertions have to be made then even more statements are needed for the justification of the latter assertions, and so on *ad infinitum*, until the theory ends up being a convoluted mishmash of unsubstantiated propositions. Nevertheless, this would lead to a probabilistic, rather than an objective statement as previous inductive propositions will be justified with even more unsubstantiated inductive propositions. But such probabilistic statements invite subjective interpretation of hypotheses and theories and do not lead to objective knowledge in any given discipline (Popper, 2002). As Wittgenstein puts it:

> "The process of induction is the process of assuming the simplest law that can be made to harmonize with our experience. This process, however, has no logical foundation but only a psychological one. It is clear that there are no grounds for believing that the simplest course of events will really happen." (Wittgenstein, 1996, pp. 179 - 181)

Once we have developed a theory of narrative that can be tested against the ample empirical examples only then one can claim that such theory is objective and generates objective statements. However, there are opposite views on how structuralism is implemented into narrative since it is being regarded as a:

> "...damagingly narrow and mechanistic way of understanding that 'reduces literature to a largely

> impersonal technique instead of the superior form
> of self-expression we ordinarily hold it to be."
> (Sturrock, 1986, p. 103)

The counterargument to the above statement is that spontaneous generalizations and 'commonsense reasoning' should be replaced by an expansion of knowledge based on a pre-established framework of principles that will reveal the limits of inductivism as:

> "…the triumph of structuralism would be the death of 'humanism' in literature. [However] this fear is unfounded. All that structuralism proposes to do is to establish the limits within which subjectivity must work." (Sturrock, 1986, p. 104)

The danger of pure structural analysis is 'the danger of all formalism', where the analysis will approximate more an algebra, so that 'all distinctions between variants are lost sight of in the search of invariants' (Sturrock, 1986, p. 119). Nevertheless, structuralism has been proved to be a good starting point that has run its explanatory course and must be fused into a new theory, or a model, such as *Screenplectics*, that not only provides the initial terms and principles, but also fertile ground for further theorization.

Having recognised the limits of interpretive inductivism (abduction) in the formulation of a universal theory of narrative based on an *a priori* study of genres, Barthes, in his nominal work *An Introduction to the Structural Analysis of Narrative*, states that:

"Many commentators, who admit the idea of a narrative structure, are nevertheless reluctant to cut loose literary analysis from the model used in experimental sciences: they boldly insist that one must apply a purely inductive method to the study of narrative and that the initial step must be the study of all narratives within a genre, a period, a society, if one is to set up a general model. Linguistics, which only has some three thousand languages to contend with, failed in the attempt; wisely, it turned deductive, and from that day on, incidentally, it found its proper footing and proceeded with giant steps, even managing to anticipate facts which had not yet been discovered." (Barthes, 1975, p. 238)

How the above is achieved in *Screenplectics* is also explained by

Barthes:

"[Linguistics] is obviously committed to deductive procedures; it is compelled to conceive, first, a hypothetical model of description (which American linguists call a 'theory'), and then to proceed gradually from that model down, towards the species, which at the same time partake in and deviate from the model. It is only at the level of such conformities or discrepancies, and equipped with a single tool of description, that the analyst can turn his attention once more to the plurality of narrative acts, to their historical, geographical and cultural diversity." (Barthes, 1975, p. 239)

If tentative theories lack any empirical correlation and do not produce

objective knowledge, how can new theories, based on what has

already been established, expand a field of study?  A model is

certainly needed where the conclusions will be derived directly from

the initial assumptions and will be empirically confirmed.

However, there is a single but extremely important differentiation between *Screenplectics* and the purely deductive process described above by Barthes. The fundamental propositions put forward by *Screenplectics* have the ability to produce 'concepts more testable and persuasive' (Chatman, 1980, p. 18) than their interpretive counterparts, and conclusions should be generated from them but not with absolute certainty. Thus, *Screenplectics* should be seen as a narrative model with empirical justification that distances itself from deduction for less-than-certain inferences. The [PA] mechanism emphasizes this notion since it has the ability to weed out bad narrative propositions, returning the process to the beginning in order for a better alternative to be found.

One of the advantages is that it not only focuses on the patterns yet to be realized by such formalization but it also adds to the equation the differential semantic relationships of a screenplay system's narrative components. As Dreyfus and Rabinow explain:

> "…there are two kinds of structuralism: atomistic structuralism in which the elements are completely specified apart from their role in the system, and holistic structuralism, in which what counts as an actual element is a function of the whole system of differences in which the given element is involved."
> (Dreyfus and Rabinow, 1982, p. 53)

Stam, Burgoyne and Flitterman-Lewis further explain that:

> "[Dreyfus and Rabinow]…distinguish between holistic structuralism, i.e. one positing structure,

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deductively determined, which exceed empirical instantiations, and atomistic structuralism, i.e. one positing structures determined by inductive generalization." (Stam *et al.*, 1992, p. 18)

However impossible it may be to generate a deductive proof for *Screenplectics,* it is far more possible to confirm it inductively by evidence.  Nevertheless, deductive proofs are often associated with mathematic theorems and axioms and convey absolute truths over possible ones, and thus, it would be unreasonable to demand a deductive proof here.   The process of deduction has been applied in a flawed way in cognitive film semiotics for the formulation of theories. An example of this inappropriate application is the *commutation test* film theorists borrowed from linguistics.  As Buckland explains:

> "Linguistics does offer methods of inquiry that film theorists can adopt. I shall refer to the most obvious example: Early film semioticians borrowed from structural linguistics the commutation test, a deductive method of analyzing how the underlying level lends structure to the surface level. This method consists of the activities of segmentation and classification. In principle, a commutation involves the correlation between a change on the surface level and a change on the underlying level. A change on the surface may be either a variation of the same code or a new code.  By means of the commutation test, semioticians can identify changes on the surface level that correlate with the changes on the underlying level." (Buckland, 2000, p. 11)

It is obvious that by mentioning the activities of segmentation and classification Buckland is referring to a process that is similar to deduction since *ad hoc* propositions will derive from the initial process

of classification.  However, the generation of absolute truths is almost impossible, even in  logic or mathematics (Gödel's incompleteness theorem), hence, I find the application of deduction in film theory problematic in its genesis.  Nevertheless, such an aspect did not deter Metz to formulate his *grand syntagmatique* based on the commutation theory following a process of thought that is neither deduction or induction but rather abduction, where one seeks to interpret causes and intentions by guessing.

However, the theoretical framework proposed by *Screenplectics* has to be confirmed by evidence in order to be acceptable; if that proves to be the case then all the conclusions deriving from the original premises of the model should also be acceptable, or at least, reliable.  In other words, they will have attained an objective status of a wider, or universal, acceptance.  Nevertheless, it is evident that a bold reformulation of methodology is needed, one that will link the strengths of an inductive approach with empirical confirmation under the common umbrella of *Screenplectics*.  It would be irrational to disregard inductive reasoning just because it does not produce absolute certainties in the field of narrative analysis.  It would also be irrational to reject a well-confirmed theoretical framework just because it lacks absolute certainty.  As Bordwell says:

> "The principles, practices, and processes we detect
> are unlikely to be models of rigorous reasoning.  But,

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then, neither are most of the ideas we entertain."
(Bordwell, 2008, p. 88)

### 2.1.3  Cross-linking inductivism with empirical justification

Formulating a theory is more than holding or exerting criticism on existing texts that often seem to be delving into the abstract realm of subjectivity rather than the objective examination of evidence. With the main point of research today being empirical functionality, rather than abstract philosophical speculation, holism is the mindset that unites fragmented interdisciplinary research seeking to explain underlying objectivity. In *Screenplectics* forming a theory is a two-fold task. Apart from constructing an assembly of explanatory principles and propositions that will serve as the initial theoretical foundation, we also need to explain how they are specified at an intuitive level (Chatman, 1980), but also how they produce objective statements that are confirmed by evidence.

In order to have a sustainable theory with an ever encompassing explanatory capability, even if such a task is huge, the following steps, described by Lewin (1959, p. 3) in *Field Theory in Social Sciences,* have to be taken:

    i)      The fundamental rules and principles must be identified and laid out. This will form the theoretical framework of

*Screenplectics.* Dramatic components populating the deep and intermediate structures of the model, out of which all subsequent propositions will derive, will also be established.

ii)     The propositions must be adapted to the specific model in order to maximize the theory's efficiency with the explanatory capacities acting as the structural theoretical grid.

iii)     Assumptions regarding key issues must be formulated and must not be expected to be always correct. This suggests that although the initial propositions are established from the outset, the model will remain inductive as not all its principles will be tending to absolute objectivity.

iv)     The propositions of *Screenplectics* must be tested for their practical and explanatory capacity. The testing of the propositions, however, presupposes the creation of the means of testing in the first place based upon the practical application of the same assumptions. In other words, the explanatory capacity of the assumptions will explain further what we already know and how it works at the intuitive level. Based on the quality of the explanations we could rule out which assumptions to keep and which to discard. The assumptions or propositions that will be justified empirically can be regarded as attaining an

objective state, thus producing reliable statements, while propositions that cannot be justified empirically will be regarded as producing unreliable statements and, therefore, will be discarded.

v) Following extensive scrutiny, the initial assumptions will widen, revealing unexplored paths, where knowledge by experience and intuition will be replaced by systematic exploration and the necessary formalization.

vi) And so a fully rounded theory will evolve that will allow the production of consistent and coherent outcomes, i.e. logically tighter screenplays, offering a better understanding of narrative in its entirety.

vii) *Screenplectics* should be able to solve existing problems but will create new ones that will need, in turn, to be explained and solved. Progressing from this, an even wider theory will soon be needed in order to replace the old one, and so on, bringing into the foreground the Popperean process for the evolution of knowledge.

Rooted in the above seven steps of theory-forming lies an evolutionary progress that is based on a previously established theoretical framework that could be justified by direct empirical testing. This process is self-correcting as it derives knowledge not from generalizations or interpretations but on account of conclusions

through factual justification. Good propositions will be kept and expanded whether bad ones will be discarded. It is up to further scrutiny to compare the theory's conclusions in order to find what logical relations exist between them, i.e. compatibility or incompatibility, in order to expand it, and 'attempt to verify or falsify it' (Popper, 2002, pp. 9 - 10). If certain conclusions are deemed falsified then 'a feedback process ensures that, by returning the findings to the initial researcher, the generation of knowledge continues' (Skyttner, 1996, p. 11) as new propositions must be put forward in order to solve the arisen problem.

By shifting the weight of falsity to the initial assumptions we are led to 'a formulated theory that can be regarded as objective and not believed' (Popper, 1979, p. 31). That is why in a systemic analysis, such as the one in chapter four, logic needs to meet creativity, deduction to meet induction, and reduction to meet holism. As de Beaugrande notes 'before we formalize a domain, we need empirical evidence about its nature' (De Beaugrande, 1982, p. 387). De Beaugrande continues his argument by adding that:

> "If this kind of a grammar is to work, we will need closer integration between the formal-deductive approach and the empirical-inductive one... First, we must consider whether a grammar can and should imply or assert the independence of structure from content. To have a grammar at all, one must have both a set of categories for classifying elements, and a set of rules for arranging elements." (De Beaugrande, 1982, p. 387)

In reality, narrative composition is actually a problem-solving process where structural-based principles coexist with content-based ones. The content and context of stories (semantics level) can be re-produced in a multitude of ways but the same core theoretical framework remains the same. This is because stories are heavily depended on content and context in order to be created. As de Beaugrande explains:

> "...we identify or understand a problem by relating content to a structural configuration: a network of states and their transitions. It is therefore inappropriate to adopt an either/or stance on structure versus content, placing the story grammars on one side of the fence and the problem-solving story schemas on the other." (De Beaugrande, 1982, p. 389)

It is appropriate to make here the distinction that there are propositions that apply to the screenplay system in whole and others that only apply to the individual dramatic components. The principles referring to the whole have 'transcendental over-all properties that are clearly distinct from the properties of the individual components' (Piaget, 1968, p. 7). For example, in a complex screenplay system [CSS], the assumptions of the initial story-world parameterization, and the limitations that are imposed by them on the screenplay's internal dramatic logic, apply to the spatio-temporal dimensions of the fictional story-world encompassing the whole structure, and have their properties extended over to the individual components, i.e. characters, affecting them indirectly. The characters do not exist in isolation and the structural groups they form do not share the same properties.

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However, the individuals and their groups merge into the whole with its propositions to be transcending to the lower levels of hierarchy either on the vertical or the horizontal dimensions of the story-world. Vertical dimensions of the story-world refer primarily to structural limitations such as *plot points*, whether horizontal ones have a more abstract quality as they refer to values such as chronology, historical background, and causality, that are positioned along the characters' goal-path, from the start of the story to its end. Thus, information flows vertically, horizontally, and bi-directionally as components react to the limitations imposed on them. This transcendental, bi-directional and structurally integrated flow of *differential dramatic information* has been termed by Elam (1980, pp. 40-41) in *The Semiotics of Theatre and Drama* in order to differentiate it from semantic or statistical information.

The above elevate the notion that complexity theory is the appropriate framework for the better understanding of narrative. Going down the path of holism, however, renders all the attempts for the mathematical formalization of *Screenplectics*, not only impossible, but, most importantly, unnecessary as well. By asking for rules and proofs similar to an analogous mathematical formalization only boundaries can be imposed on our understanding. Further, by attempting to reduce - or deconstruct - a narrative system to its fundamental parts in order to fully comprehend it one only succeeds in removing the semantic level from the equation, ending up with parts that convey no meaning,

sharing similar values to mathematical variables, i.e. numbers. Thus, I hereby present a discussion on why the methodology of reductionism, as the direct opposite of holism, fails when applied to all narrative models.

### 2.1.4 Avoiding pitfalls of reductionism and logical formalization

Structuralism seeks to uncover objective knowledge through observational analysis and explain it by mapping out the underlying framework that surrounds it. In disciplines such as formal logic and mathematics this leads to a method of analysis through reduction followed by the necessary formalization that describes a system, although mathematization does not always follows formalization. The process of reduction, the foundation of the analytical method, also constitutes a formal set of logical rules and principles out of which we can deduce conclusions for the functionality of the system as a whole. As Scott points out:

> "...formalization may also be viewed as an attempt to make more explicit and visible the structure of relationships among the set of rules and principles that govern behaviour in the system." (Scott, 1998, p. 35)

Shortfalls of the analytical method is what deconstruction, or post-structuralism, wants to exploit by breaking down hierarchies and rejecting rationality. Even though structuralism has the capacity to

delve for truth having borrowed a 'scientific stance of objectivity' (Harland, 1987, p. 2), *Screenplectics* has nothing to gain by reducing wholes to mere parts, then analyze and mathematically formalize them in order to explain how the model works.

A reductionist perspective assumes that by having the ability to explain phenomena on one level also has an *a priori* ability to deduce explanations for phenomena on all higher levels and that 'once the most fundamental of laws have been formalized through equations the emergent world would also fall in place' (Bak, 2008, p. 20). The reductionist fallacy suggests that once we have managed to reduce and formalize narrative correctly everything will be crystal clear about it as 'everything seems to be part of particle physics' (Miller and Page, 2007, p. 41). This flawed logic also suggests that principles of narrative derive, in a way, by the physical laws. This is what Dennett (1995) refers to as 'greedy reductionism', a sequence of rationalization that goes on like this: 'physics to chemistry to biology to psychology to sociology to economics to everything else' (Miller and Page, 2007, p. 52). However, the world we operate in is a complex system that is constituted by a multitude of smaller complex systems, thus, cannot be explained by a set of mathematical equations.

Similarly, there are currently no equations that describe narrative principles such as interactions between characters, theme, plot, even

causality. Those who have attempted such an approach, like Gerald Prince (1980) in *Aspects of Grammar of Narrative*, were not very successful either at explaining the inner workings of narrative or creating stories through an empirical utilization of their theories. Inspired by the emergence of story grammars in the 70s and Chomskyan linguistics, Gerald Prince attempted a logical approach to narrative by classifying kernel components through a set of propositions:

> "Let us consider the set of all kernel narratives, that is, the set of all narratives recounting n events (where n ≥ 2) and no more than one modification of a situation or state of things." (Prince, 1980, p. 51)

The arbitrary construction of propositions by allowing only one modification, points to a model with limited applicability which is lacking flexibility in dealing with a multitude of dramatic components and narrative systems. Prince continued by generating rewrite rules for the formulation of strings of causal relations that could be applied universally to all narratives:

> "Just as a grammar can be built to account for the structure of any and all English sentences, a grammar can be built to account for the structure of any and all kernel narratives. This grammar will consist of a set of symbols interrelated by an ordered set of rules, each of the rule being in the form X→Y (to be read: rewrite X as Y) and only one rule being applied at a time." (Prince, 1980, p. 52)

These rules were applied to create sentences, or as Prince thought, stories along the lines of 'Mary was sick, then Mary met Joan, then, as a

result, Mary was healthy' (Prince, 1980, p. 54). However, it is more than evident that Prince's rewrite rules have a limited application, and without any explanation as to why Mary was healthy again after meeting with Joan, the element of causality, that in fact, creates a coherent and consistent story, is absent. Prince has succeeded in reducing narrative to formal propositions but by doing so he has also succeeded in removing important elements such as semantics and context from it. By the same token, Prince neither explains how his rewrite rules could be used in order to understand the deeper workings of narrative nor how they could generate stories, simple or complicated. It seems then that Prince's approach, as a comprehension model, adds nothing to the semantic dimension of stories. By applying Prince's method in constructing strings of sentences that make up a story, the fundamental question of 'how a story emerges', put forth in chapter one, remains unanswered.

Another reductive approach is Brainerd's and Neufeldt's *On Marcus' Methods for the Analysis of the Strategy of a Play* (Brainerd and Neufeld, 1975) where the number of scenes, locations and characters have been quantified and analysed in a quest to discover universal story patterns. Brainerd and Neufeld tried to come up with axiomatic principles that could describe how dramatically effective a scene can be by researching how many characters are engaged in it, or how many locations a play should have in order to be considered optimal.

Then by adding and dividing figures, they tried to find the average number of scenes, characters, locations, etc., in existing plays that could be used in a comparative statistical analysis. However flawed this approach is, it certainly does not explain narrative in its whole, and the conclusions derived from such mathematical analysis cannot be regarded as substantiated enough to be taken into consideration by practitioners for the formulation of stories.

It is obvious then that not all systems can be functionally reduced to constituent parts and novel ways for addressing complex issues must be explored. The properties responsible for rendering reductionism obsolete are the complex interrelations and interactions of dramatic components, i.e. the characters populating a narrative system. The more dramatic components begin to interact with each other the more we 'move from the realm of complication to complexity and reduction no longer gives us insight into construction' (Miller and Page, 2007, p. 27). Thus, one of the reasons why reductionism has not produced any tangible results when applied to narrative models is that mathematical formalization has not attained a level of sophistication that could explain human emotions, intentions, or rational thought. Mathematical models can perfectly explain closed systems, where their propositions can be fully verified, however, when it comes to open systems this verification is partial, or approximate at best. Open systems may be radically different from one another yet their specifics are

alarmingly similar, due to different utilization of the same

transcendental structural information.  As Chomsky argues:

> "In a system that is sufficiently intricate in structure, small changes at particular points can lead to substantial differences in outcome." (Chomsky, 1980, p. 67)

Converging towards similar ideas encountered in complex systems,

Chomsky adds that:

> "[such systems]... have a deductive structure that permits a range of empirical phenomena to be derived from some simple and I think rather natural principles, and they also have the property that small changes in the parameters in some of the general principles lead to quite different languages [systems]." (Chomsky, 1980, p. 68)

In chapters three and four, I will explain why all forms of narrative can

be regarded as open and non-linear systems, and thus, complex,

where the rigorous mathematical analysis has no place.

## 2.2    What *Screenplectics* has to offer

Due to the inherent nature of a complex screenplay system [CSS], my

primary focus is to provide a deeper understanding of its dynamics,

then proceed to the demonstration of how *Screenplectics* functions as

a narrative model.  This model is fine-tuned and adjusted to the

specific narrative format of a mainstream three-act screenplay often

encountered in the Hollywood studio system.  However, it is possible for

*Screenplectics* to fit other works of written or filmic narrative with the appropriate adjustment, even 'art-house' motion pictures, but this is the context of subsequent, and standalone, research.  With regards to this, Herman states that:

> "...this logic is... preference based, with different kinds of narrative preferring different blends of states, actions and events, different proportions of stereotypic and nonstereotypic knowledge, different strategies for distributing participant files among individuals and entities in the story-world, and so on." (Herman, 2002, pp. 22-23)

The above statement, seen through the holistic perspective of complexity theory, suggests that the future states of dynamic systems, such as [CSS], may be constrained deterministically, up to a level, by their history.  It also suggests that [CSS] have the freedom to develop alternative story-paths.  These alternative 'what-ifs', spawning from the same characters in different set-ups or with different end-goals, are often explored and applied by the authors in various stages of the composition process.  The author's aim must be then to choose the best alternative scenario that either optimizes the story's dramatization, or matches their personal preferences in terms of story progression.  This is what Deborah Osberg refers to as 'a logic of freedom':

> "This is a logic in which choice is an operator in the process itself - part of its internal 'mechanics' - not something that happens to a process, something applied to it from the outside.  Since emergent processes are not fully determined - they contain within themselves the possibility of freedom - the logic of emergence could therefore also be

characterized as a logic of freedom (rather than a logic of determination." (Osberg, 2007, p. 10)

These alternative 'what-ifs' are manifested through the transformation of the dramatic components by the application of the *plot algorithm* [PA].  By investigating how this transformation occurs in practice, I should be able to identify similarities, or differences between the various narrative models and establish, or re-bridge, connections between them.  This in turn will lead to the identification of any strengths or weaknesses between the models paving the way for deeper understanding of the complexities encountered in [CSS], and will bring into the foreground their hidden underlying unity.


However, prior to any of the above, a process of story-world [SW] configuration needs to be initiated first.  During the [SW] parameterization, the author assigns real values to the story-world components, defining this way both the characters and the environments they inhibit, creating fictitious dramatic personas and drawing parallelisms and connections with the real world.  Only by defining, or dramatizing, such contextual parameters as characters, theme, story-world boundaries, goals, conflicts, and so on, are the authors in a position to fully tell a story.  Thus, [SW] configuration, which is discussed in depth in chapter four, is considered the first and most integral, step of the *plot-algorithmic* process for the transformation of the dramatic components; the process out which a story emerges.  In

other words, parameterization is the strategic assignment of real world attributes to the story-world's components, while the [PA] is the tool that invokes conflict, generates action and reaction, and progresses the story towards the desired final state.

Given enough structure, an effective narrative model can be created where overcomplicating details can be ignored. This functionality implies the existence of solid building blocks, i.e. dramatic components populating the deep structures that encapsulate the real behaviour of [CSS]. Similar approaches have been tried in economics for the creation of socio-economic models that study real-world behaviours. Thus, ignoring unnecessary details is an important part of any kind of modelling or simulation, whichever the field of application is. As Miller and Page explain:

> "... economists have been able to generate useful theories of individual and firm behaviour without having to delve deeply into the human mind or the organization of the firm." (Miller and Page, 2007, p. 35)

The dynamics of *Screenplectics* can be researched in much greater detail than in chapter four, but since the building blocks of narrative have been established, stories will emerge in their entirety without strenuous, and overcomplicating, details hindering their progression. For example, an author can establish the minimum traits and attributes needed for her characters, and by adding the necessary conflict, the

story will be told effectively without further analysis of the characters' psychological aspects. This means that no explanation is always needed why the characters have become who they are or what they do within the scope of the story. Likewise, no justification with psychological validity (disorders in their personalities) is needed in order to explain whether the characters act the way they do; or why an author has chosen to omit the explanations of the specifics of socio-economic and political aspects of the story-world acting as the backdrop of the story. Nevertheless, much the same happens in all forms of the creative enterprise where micro-worlds reflecting reality are created. Painters do not have to draw all the possible details of their worlds on the canvas to reach an audience; poets do not need to explain every possible aspect of their imaginary worlds to communicate their themes; thespians do not need to explain their sources of motivation or inspiration in order to act on stage. The rest of the details are filled by the audience's imagination through benchmarking of the reality and the cognitive schemas described in chapter one.

But one can only wonder how exactly complexity theory will provide a deeper understanding of systems for the creative enterprises since its theoretical framework was originally developed in scientific fields. Daring to draw a parallelism here, screenplays are not the only creative products that can be identified, and subsequently

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researched, as complex systems.  Examples can be found, not only in symphonic and orchestral music, but in all kinds of music; with actors communicating their characters' inner worlds on stage, both among them and with the audience.  The same goes with painting, sculpturing, dancing, even photography.  No matter where we look, emergence from deeper structures is always there.  It seems, after all, that emergence is a property of the physical world we inhibit.

A very important factor, as a measurement of its contribution, is that complexity theory offers new ways of thinking about old issues in all the fields of creative endeavour, and it has the potential to push them towards radical theoretical change and fundamental re-thinking. Another important contributive factor is that complexity theory elevates context into an intrinsic part of the system and does not limit it in a secondary role.  Researching the complex allows the development of narrative tools and the organization of information into meaningful and goal-oriented patterns that produce meaningful results: stories. Complexity theory is the direct opposite of positivist endeavours, and through its application in narrative, it attempts to explain narrative works with the assumption that even when using the same characters and set ups, thus the same story-world parameterization, no two stories will ever be the same even if they are written by different authors.  It soon becomes evident that approaching screenplays as complex

systems is more than just a metaphor.  Larsen-Freeman and Cameron

argue that:

> "Whenever we have to contemplate the abstract, voice the difficult, or make sense of the complicated, we turn to metaphor. Metaphor enables us to 'see' or understand one thing in terms of another, through analogies or mappings between two conceptual domains." (Larsen-Freeman and Cameron, 2008, p. 11)

They continue by adding that:

> "When a metaphorical idea is developed into a collection of linked metaphors that are used to talk and think about some aspect of the world, it starts to function as a model or theory... This is what happened with the theory of the brain as information-processor.  From the analogy between the brain and the computer, scientists and linguists developed computational models of the brain, which used concepts from computing to understand brain functioning and suggested further lines of research and theory development." (Larsen-Freeman and Cameron, 2008, p. 12)

Larsen-Freeman and Cameron conclude that:

> "What began as a metaphor became a useful tool for investigation and theorizing, and underpinned the cognitive paradigm across a range of disciplines... [but] there is a risk of building too high on metaphorical foundations. When speaking becomes 'output', for example, we can lose sight of how humans construct meaning through social interaction." (Larsen-Freeman and Cameron, 2008, pp. 12-13)

The same, of course, can happen when technical or mathematical

terms are used in ways that are meaningless but still sound impressive

and, misleadingly, authoritative.  This is the reason why the research

associated with story grammars, as these were discussed in chapter

one, at some point hit a dead end: it was impossible for these theories to proceed further and explain narrative in more depth. The tools that were used by such theories were wrong and not directly applicable to the problems that were called to tackle. However successful Chomsky has been with his theories on grammar, the same tools are not transferable into the study of narrative and its underlying dynamics. Chomsky built upon solid foundations of grammar rules regarding nouns, adjectives, and so on, and he was able to mathematize transformation rules for the production of infinite sentences. When the same ideas were transferred into the study of story grammars the produced results did not live up to the expectations.

On a parallel level, testing *Screenplectics* can lead to an optimization and expansion of the theory itself. But we must be careful in order to avoid pitfalls of interpretive approaches and not re-shape the theory in order to fit the facts. Bordwell argues that a critic's interpretation tests psychoanalytic theories of cinema:

> "That is, a critical exegesis, judged acceptable on grounds of interpretive propriety, functions to confirm, revise, or reject a theoretical argument. This makes the interpretation roughly analogous to the scientific experiment that tests a hypothesis, while the conventional procedures across theoretical schools become something like an accepted scientific method." (Bordwell, 1989, p. 4)

However, the counter argument to Bordwell's above bold statement is that theories should be tested on whether they satisfy existing practical

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issues or produce empirically applicable results rather than justifying subjective interpretations even through the analogy of a scientific experiment.

## 2.2.1 Descriptive and explanatory adequacy

This is where one needs to resort to the explanatory and descriptive adequacy of a proposed theory in order to justify or refute its propositions.

### 2.2.1.1 Explanatory adequacy

Explanatory adequacy of narrative, that is also regarded as the weak principle of generative capacity, sets to identify whether the underlying rules and principles of a narrative model produce all stories in a given domain, or genre, after they have been modelled empirically. In other words, explanatory adequacy investigates whether the same narrative principles, such as of *Screenplectics*, can be applied to various narrative formats, i.e. screenplays, stageplays, fiction books, etc., but in different forms within these formats, i.e. thrillers, romantic comedies, historical novels, etc. For the better explanation of what explanatory adequacy is, I shall discuss here the analogy of the differences between cinematic genres e.g. romantic comedies and thrillers.

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Although both genres are composed at their fundamental level by the use of the same principles, the conventions in each genre differ significantly due to their empirical adjustment in an ever changing market that often dictates what genre films will be produced. This dictation forms the problem of a construction of a theory describing the process of initial selection. It is what Chomsky refers to as the rarely attainable level of internal justification of the theory's explanatory adequacy, a rather complex and utopian process because of a massive amount of data that needs to be collected and analysed - it is as we would have to analyze the totality of *genre films* in order to test their external justification

The external justification of the theory is only limited to the extent the theory correctly describes its object; in our case screenplays. However, there is no operational test in place to justify a writer's intuitive procedures over the selection which specific work of narrative or genre to learn and practice. A criterion for testing the adequacy of the model is called the *constructional homonymity* (Chomsky, 1968, p. 86). It refers to how deep structure propositions are represented onto the surface structure between authors.
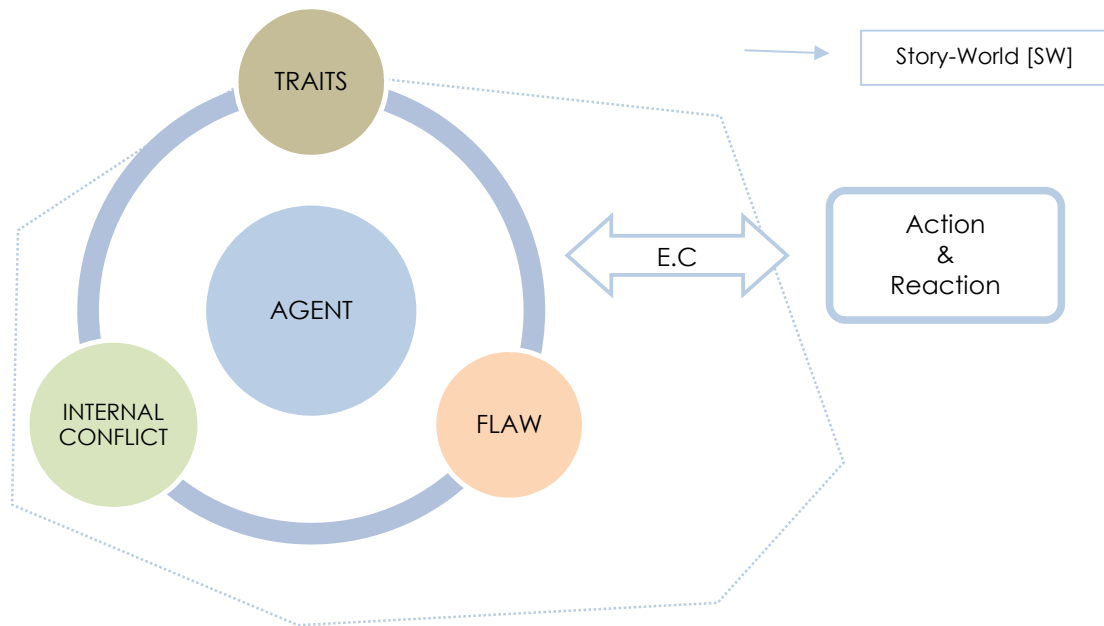
Figure [2.1] Constructional Homonymity

A schematic interpretation of the *constructional homonymity* is shown in figure [2.1], where an agent, or character, assigned with different parameters for his internal conflict, flaw and traits, will act and react differently on external stimuli, or conflict, according to the fictional environment, or story-world, he belongs to. Thus, different authors will set different initial assumptions regarding the character's parameterization, having him reacting differently in their stories, as this is represented on the surface structures by the character's actions and reactions. The above proposition, even though a simple one, can be interpreted in a multitude of ways and has the ability to produce infinite variations. As Chomsky explains:

> "… we cannot understand any sentence fully unless we know at least how it is analyzed on all levels including higher levels as phrase structure, and, … transformational structure." (Chomsky, 1968, p. 87)

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## 2.2.1.2          Descriptive adequacy

Descriptive adequacy, the strong principle of generative capacity, sets to explain whether the narrative model, in our case *Screenplectics*, fully explains the structure of all the stories it generates in screenplays, both in a solid fashion and canonical form of occurrence.   A major contention of *Screenplectics* is that all stories share an underlying framework that remains relatively invariant in spite of major differences in content and context from story to story, and different works of narrative.  As Johnson and Mandler point out:

> "The evaluation of the observational adequacy... is complicated by the limited usefulness of explicit judgement of acceptability... People do not have as precise intuition about the acceptability of stories as they do about sentences. Nevertheless, it is possible to make some initial assessments of the observational adequacy of various models by asking whether they correctly predict the occurrence of story structures that are found frequently enough to suggest that they represent regular forms." (Johnson and Mandler, 1980, p. 77)

Chomsky shifted the centre of attention of linguistic inquiry from the actual language to the intuitive competence that underlies its behaviour.  In much the same way, by establishing a framework of principles and rules that refer to the descriptive adequacy of the model's generative nature and universality, such a model could prove to be adequate if it strongly showcases its ability to generate the 'correct set of structural descriptions' (Chomsky, 1965, p. 60)  onto the

surface structure of a multitude of stories in a variety of genres. Therefore, the theory will prove to be descriptively adequate if its generative capacity includes the set of structural descriptions for all forms of narrative, given enough adaptation to bridge the differences between them. The model's descriptive devices must be able to be utilized universally and not specifically applied to particular works of narrative, otherwise this non-universal application can form the strongest proof for 'the model's inadequacy' (Chomsky, 1968, pp. 86-87). Thus, the model must have a *computational aspect,* i.e. the principles and patterns that form the base rules and the mechanism that transforms these base rules into surface propositions. It must also have a '*conceptual aspect*' (Chomsky, 1980, p. 54), a system of references and relationships between the dramatic components i.e. agents, motivations, goals, etc.

In the opening paragraphs of chapter three I shall discuss the ability of the humans to speculate on complex systems, and therefore, create complex stories. It is what Tsoukas and Hatch regard as *second order complexity*:

> "...thinking about complexity focuses our attention on how, in making plots, we construct and use narrative thinking. This is what Ricouer addresses with the concept of *emplotment*..." (Tsoukas and Hatch, 2001, p. 997)

A fully fledged theory of narrative is a gargantuan task to accomplish since the intuitive processes involved are evolutionary properties of the mind which still remain unexplored. In cognitive levels, narrative is an evolutionary 'miracle' of mental processing: our ability not only to think how to write a story, or what story to write, but also how we go about thinking in order to think how to write a story - two notions separated with vast semantic differences. We have mastered the intuitive processes in order to create three-dimensional worlds on the one-dimensional space of an A4 paper sheet that play out on a two-dimensional projection screen, but we do not know how we actually go about doing it. These intuitive mental processes will be discussed in more extent in chapter three.

# Chapter Three

**The screenplay as a complex system**

## 3.1    A holistic and systemic approach

As I explained in the previous chapter, mathematical formalization may one day have the capacity to describe the rules and dynamics of a complex system in depth.  However, such an endeavour will not be without difficulties because of the multifaceted intricacies involved in the overall process.  In other words, even if one day the underlying computations generated in a screenplay are reduced down to sets of mathematical formulas, neither such a screenplay will ever be reproduced twice nor the mechanism that facilitates the emergence of stories would have been explained.

The universality of a three-act structure story schema, a hypothesis which is supported by 'finding stories with similar structure from all parts of the world' (Mandler, 1983, p. 13), calls for structural invariants that cut across cultural variations, yet exhibits a complex function:

> "The story schema would thus enable the reader to form a coherent representation of the story as a whole.  The bridging information that connects the units is supplied by the schema, and does not have to be built up afresh, as presumably must be done when reading unfamiliar types of prose." (Mandler, 1983, p. 14)

The importance of plot points as structural navigators, or nodes, can be summarised to the fact that they instruct the audience that a change in the story has taken place:

> "A topic change is important in another sense, however; it tells the reader that the story is moving forward and that the next constituent [act] has begun. A reader can thus use knowledge of story structure as a method of recognizing and categorizing sentences into topics as they occur."
> (Mandler and Goodman, 1982, p. 510)

The question arising here is who created the three-act structure or where does it come from originally. Although the origin of a beginning, a middle and an end in stories was studied by Aristotle in *Poetics*, it could also be equally plausible that no one created the three-act structure and that it has evolved through intuition, repetition and empirical practice, much as *memes* do. It could be that Dramaturgists prior to Sophocles have experimented with various forms of story structure but the three-act structure was deemed more successful and won over the rest. As physicist David Deutch notes:

> "People tell each other amusing stories – some fictional, some factual. They are not jokes, but some become memes: they are interesting enough for the listeners to retell them to other people, and some of those people retell them in turn. But they rarely recite them word for word; nor do they preserve every detail of the content. Hence an often-retold story will come to exist in different versions. Some of those versions will be retold more often than others – in some cases because people find them amusing. When that is the main reason for retelling them, successive versions that remain in circulation will tend to be ever more amusing. So the conditions are there for evolution: repeated cycles of imperfect copying of information, alternating with selection." (Deutsch, 2011, p. 372)

It seems then that the three-act structure has evolved because it is a

necessity for the comprehension of the story by the audiences. As

cognitive psychologist Perry Thorndyke explains:

> "Comprehensibility and recall were found to be a function of the amount of inherent plot structure in the story, independent of passage content. Recall probability of individual facts from passages depended on the structural centrality of the facts: Subjects tended to recall facts corresponding to high-level organizational story elements rather than lower-level details. In addition, story summarizations from memory tended to emphasize general structural characteristics rather than specific content. For successively presented stories, both structure and content manipulations influenced recall... This is true despite the fact that people frequently use memory to comprehend anecdotes, stories, or sequences of events with situational context, rather than isolated and unrelated sets of words or sentences" (Thorndyke, 1977, p. 77)

Before proceeding to the underlying dynamics of *Screenplectics* that

describe the functions and applications of schemas for the

composition of screenplays, we need to understand what a complex

system is and how it works as a whole, or holistically. In order for

narrative complexity to be understood and, therefore evolve to a

meaningful theory, it has to be approached as a metaphor, or

analogy, of the existing theories that were developed during the

development of the original complexity theory.

### 3.1.1  Holistic systems

The screenplay, seen as a narrative system, and its underlying dynamics and mechanisms, may be better understood if it is examined under the perspective of *holism* (Johnston, 2008).  Holism is a mindset that attempts to explain a system not by separating and analyzing its parts individually but by rather examining the whole, or the finished screenplay.  Seymour Chatman referred to the notion of narrative as a whole:

> "...because it is constituted of elements - events and existents - that differ from what they constitute. Events and existents are single and discrete, but the narrative is a sequential composite."  (Chatman, 1980, p. 21)

A holistic view entails that the value of each component, after they have been integrated into the screenplay system, is determined by all the other components and has no significance by itself alone.  Each component has a function, thus a narrative is an accumulation of functions, or in Barthes' words:

> "The fact remains, however, that a narrative is made up solely of functions: everything, in one way or another, is significant.  It is not so much a matter of art (on the part of the narrator) as it is a matter of structure." (Barthes, 1975, p. 244)

Barthes notes that to to understand a narrative holistically:

> "... is not only to follow the unfolding of the story but also to recognize in it a number of 'strata', to project the horizontal concatenations of the

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narrative onto an implicitly vertical axis; to read a narrative (or listen to it) is not only to pass from one word to the next, but also from one level to the next." (Barthes, 1975, p. 243)

A simple example is needed here in order to help the reader visualize the complexities that come into play in a finished screenplay. So let us assume the creation of a story-world with two characters, a set location in space and time, and a set of basic parameters that regulate this story-world. The story-world regulating parameters are constituted by characters, their traits, inner and outer conflicts, and personality flaws and quirks. They also include a basic sequence of events that represents the plot-line, and a set of goals and dramatic needs that generate the minimum dramatic conflict. It is already becoming evident that even in this simple set up, the set of story-world parameters multiply with each dramatic level added into the story. The more characters a screenplay has the more complex their interactions may be and thus the overall complexity of the story will also be more complex, although not *ad infinitum*. After all, complexity in a system increases:

> "...with the number of distinct components, the number of connections between them, the complexities of the components, and the complexities of the connections." (Gershenson and Heylighen, 2005, p. 3)

Now, let us call this initial set up the *state-space* of our story-world. A state-space is the sum of all the spatio-temporal boundaries

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encompassing the story-world parameters, including the characters. A state-space can be visually represented as a three dimensional construct with the temporal dimension on the vertical axis (y-axis) and the spatial dimensions on the horizontal (x-axis) and diagonal axis (z-axis). If another character is added into the story then her plot-line is connected with the plot-line of the two existing characters. This way, however, the story dimensions multiply, subsequently increasing the connections between the characters and their state-space, and therefore the complexity of the screenplay.

The *state-space* is constituted by all the possible states of the screenplay and each of its *attractors*, or *structural* nodes, is 'described by a particular set of values of the story-world's configuration' (Larsen-Freeman and Cameron, 2008, p. 47). Every action or event that has a dramatic value, i.e. adds another sub-plot to the story, reveals a plot or character twist, or simply moves the story forward by forcing the characters to react to another action, can be referred to as an '*attractor.'* *Attractors* are structural points along the *state-space* where several story dynamics converge and link to with distinct trajectories (Cilliers, 1998, p. 97). *Attractors* aid the consolidation of important narrative information pertaining to the screenplay in question. According to Larsen-Freeman and Cameron 'a*ttractors* can produce order in a dynamic system by constraining the system into a small region of its state space' (Larsen-Freeman and Cameron, 2008, p. 54).

As I shall explain in chapter four, the action schemas used for the segmentation of information in screenplays are typical examples of *attractors*, with the three-act structure being an elaboration.

As I have previously argued, the structural arrangement of plot information allows audiences to follow the story through memory recall. In other words, *attractors* are an abstract tool authors use for the manipulation of content.   These behavioural trajectories of the constituent parts have a spatio-temporal dependence, thus are non-linear (Marion, 1999, p. 64).  Non-linearity refers to changes that are not proportional to input.  This non-linearity of spatio-temporal dependencies derives from the fact that a simple change in the beginning of the story can create a chain of events that will result in bigger changes later in the story.  Larsen-Freeman and Cameron argue that:

> "Complexity arises from the non-linear nature of the connections or interactions between the components of a dynamic system.  In a non-linear system, the elements or agents are not independent, and relations or interactions between elements are not fixed but may themselves change." (Larsen-Freeman and Cameron, 2008, p. 31)

An example of spatio-temporal sensitivity to non-linearity could be found in *Die Hard*, where almost all the action takes place inside a tower.  If during the development stage the set up had to change from this tower to the interior of any other building over budgetary concerns,

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then the screenplay would have to undergo a page-one rewrite - rewritten from scratch. Examples of major *attractors* in a screenplay are the plot-points. Without attractors, the screenplay will become unstable; its goal-oriented direction and forward momentum will suffer due to the lack of plot-points, thus the audience might be having problems following the story.

A screenplay can be categorized as a holistic system since its overall capacity exceeds the summed-up capacities of its individual components (Rescher, 1998, p. 2). This is often referred to as the '*system principle*' (Skyttner, 1996, p. 42), which includes the system's emergent properties and synergetic effects. System theorist Lars Skyttner (1996, p. 42) uses as an example the water which is the emergent property of the synergetic effect of hydrogen and oxygen. A similar example is a music symphony, where the music produced is the emergent property of the synergetic effect of musical notes and tones from a great variety of musical instruments. A motion picture is also an emergent system which exhibits synergetic effects between its components, i.e. the personal work of all cast and crew, what the story is and how the screenplay has been written, the utilization of equipment from experienced personnel, marketing, distribution etc. When we say that a system has emergent properties we refer to its qualities that are absent in the individual components that constitute it.

Thus, a screenplay's emergent property is its story since the individual elements, i.e. characters, spatio-temporal set-up, locations, theme, etc., do not portray any such quality if they do not function synergistically. The same applies to all narrative forms and most creative endeavours, including music, pottery, sculpturing, painting etc. As Heylighen, Cilliers and Gershenson note:

> "...on closer scrutiny practically all of the properties that matter to us in everyday-life as beauty, life, status, intelligence... turn out to be emergent." (Heylighen, et al., 2007, p. 122)

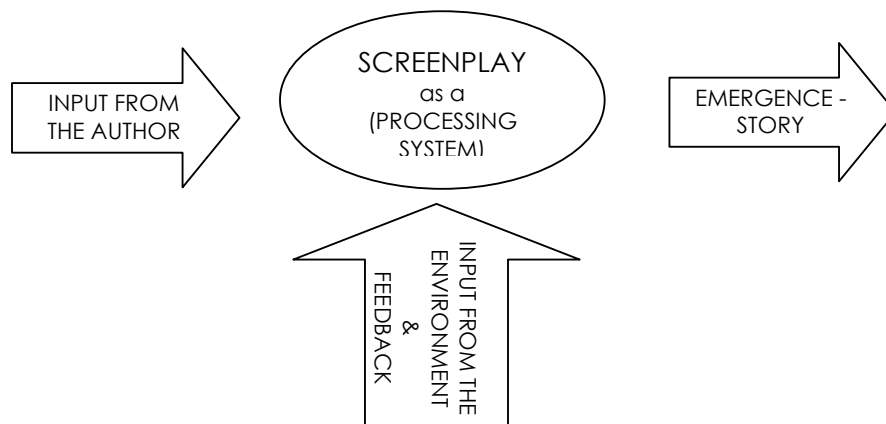In figure [3.1] the screenplay's overall functionality can be visualized as such:



Figure [3.1] - A [CSS] as a processing system

One of the main characteristics of holistic systems is that their components affect each other in a multifaceted and multilinear fashion, adding more variation to the system's value. Skyttner mentions

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a *holistic paradox* since '...it is impossible to become conscious of a system as a wholeness without analyzing its parts (thereby losing the wholeness)' (Skyttner, 1996, p. 42). But this wholeness is only lost linguistically since the individual elements only acquire significance, functionality, and therefore meaning, due to their synergetic properties. Holistic systems incorporate a network of components that act and interact parallel to one another, influencing other elements, simultaneously reconstructing and being reconstructed by their environments (Cohen and Stewart, 1995). If the properties of the components are individually analysed in a parameterized story-world, without referring to the importance of the system's immediate environment, or *state-space*, no valid conclusions can be drawn for the overall holistic functionality of the screenplay since the components are intrinsically connected to each other.

No component acquires meaning by itself but always in conjunction with the whole, and always within an encompassing system of references. As Nicholas Rescher notes:

> "... the complexity of stories is holistic. It resides in the volume of their events, the intricacy of their plots, and the interweaving of the relationships among their characters: chaos, as such, has nothing to do with it." (Rescher, 1998, p. 2)

However, the distinction between complication and complexity must be emphasized. In a complicated system the components retain a

degree of independence from one another.  If a component is removed then the whole carries on functioning but with reduced complication and level of efficiency, without its overall behaviour and output to be affected.  A system is regarded as complex when out of the interaction of lower-level components complexity emerges, and the interdependences of the components starts becoming important. In that case, the removal of a simple component affects the overall behaviour of the system and the system as a whole ceases to function (Miller and Page, 2007, p. 9).  Removing the protagonist from a screenplay the story will break down immediately, and the screenplay will not be regarded anymore as a complex system.  As economists Miller and Page (2007, p. 8) explain 'complexity is a deep property of a system, whereas complication is not.'  Complex systems are able to perform in full capacity under different conditions (Cilliers, 1998, p. viii), and produce a different outcome each time from the same input, a property which is known as *multifinallity*.  If handled by different authros, the same parameterized story-world, the input, can produce different stories with varied degrees of execution in the forms of screenplays, the output.  Skyttner (1996, p. 35) refers to a *system* as '... a set of interacting units or elements that form an integrated whole intended to perform some function.  Reduced to everyday language this can be expressed as any structure that exhibits *order*, *pattern* and *purpose*', and must satisfy the following conditions (Ackoff, 1981; Ackoff and Gharajedaghi, 1996, p. 2): first, a system is a whole that is defined by its

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functions. Second, the behaviour of the essential components affect the behaviour of the whole. Third, all the behaviours are interdependent, and fourth, If subgroups are formed, they too affect the behaviour of the whole. A formal definition of what constitutes a system can be shown with the following formula: $S = (C, R)$ (Klir, 2001, p. 5), where [S] denotes the story-world, [C] the number of its components, and [R] the relations between them. However, as I argued in chapter 2, such formalization does not explain any of the story's deeper intricacies which can be graphically represented as in figure [3.2]:
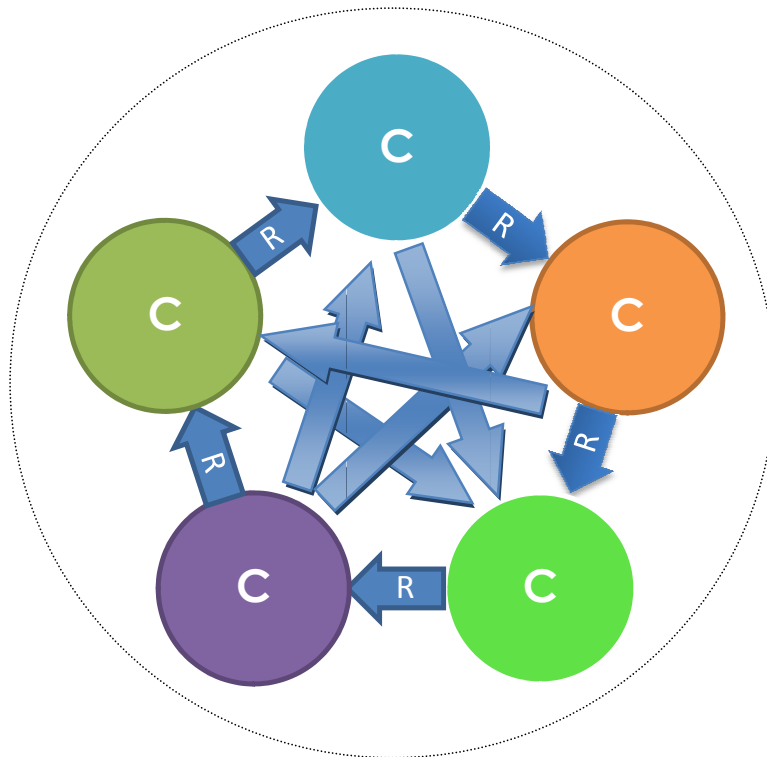


Figure [3.2] - Components and the relations between them

To the above characteristics the following may also be added (Churchman, 1971): first, the system's performance can be determined, second, it has a user or users, third, the components have a purpose themselves, fourth, the system is embedded within an environment, and fifth, it has a designer who is dealing with its structure and is responsible for its stability in order to maximize the system's performance and value to the intermediate or end user.

System theorists Bertalanffy (1955) and Litterer (1969), in formulating the hallmarks of the general systems theory, have added that systems (Skyttner, 1996, p. 33):

a. Receive *inputs* and deliver *outputs*. Especially in open systems, the input is always affected by the engulfing environment. The input in screenplays comes in the form of parameterized story-worlds.

b. Are *goal-seeking*, where the systemic interaction must result in a goal and an equilibrium point must also be reached. A goal-striving protagonist has to reinstate the equilibrium that was affected by the opposing forces in the beginning of the story.

c. Have a *transformation process* - the [PA] mechanism - that uses base rules for the transformation of narrative input to narrative output in order for the in-story goal to be attained.

d. Go under a form of regulation, meaning that errors or deviations are corrected through a feedback process. Feedback has to be provided during the rewriting stage for the correction of logical story errors.

e. Are *hierarchic,* meaning that wholes are always constituted by smaller subsystems. Screenplays are constituted by smaller systems, i.e. relations between the characters and their environments, sub-plots, parallel story levels, etc.

f. Have *differentiation* and the components perform different tasks and functions. The same character can perform different functions, a property often encountered in episodic TV drama series where the characters perform multiple functions from episode to episode.

g. Have *equifinality* and *multifinallity*, meaning that there are alternative ways in reaching the same objectives from a given initial state. For example, the same story-world configuration can be utilized many times over but the outcome will always be different stories each time.

h. Cannot have their end state reversed back to the initial states (Marion, 1999, p. 68). In a screenplay, once the procedure is finished, and certain story-related decisions have been taken in each of the forking paths, it is almost

impossible to follow the path of logical thoughts back to the beginning.

### 3.1.2 [CSS]: Both 'top-down' and 'bottom-up'

Following the propositions in [3.1.1], it seems that every form of narrative can be regarded as being both a *'bottom-up'* and a *'top-down'* approach. A *'bottom-up'* approach influences the behaviour of a narrative system through the direct interactions of the fundamental components populating its deep structure - through its rules and principles. A *'top-down'* approach describes a procedure where high-level rules are imposed onto the system and the output is monitored throughout the process (Miller and Page, 2007, p. 66) as is the case with the author's influence.

A screenplay system has an author who is dealing with its structure, modifying and optimizing it. This is a typical *'top-down'* process and will be further explained in [3.3]. The base rules and the transformation process of the [PA] form the *'bottom-up'* approach and will be explained in [4.8]. The process of software design and programming, for example video games, can be used here as an analogy of a *'top-down'* process that is coordinated by a designer. In video games, computational algorithms embedded within the software, and executed by the hardware, i.e. computers, specify how the game will

react to input by a human user (Marion, 1999, p. 31). In this analogy, the software resembles the imported rules and the computer is the medium where computations are performed. In principle, narrative, as a form of problem-solving that portrays hierarchical and architectural capacities, does not differ from software programming, apart from the device, or the location, where the computations, either qualitative, i.e. logical, or quantitative, i.e. computational, are performed. In the video games scenario, a computer is needed, whether in the narrative scenario the computations are performed in the author's brain. The author, as the designer of the screenplay system, decides what rules will be embedded in the form of story-world configuration and how the characters will react to stimuli in various parts of the story. This is the reason why I regard the author as an active component of the system he creates, which I will further discuss in [3.3].

The existence of common structures, principles and base rules in similar narrative systems is called *isomorphism*. As Skyttner puts it:

> "Analogies are explanations done by relating something not yet understood to something understood. Isomorphism exists when common characteristics, structures, formulas and form of organization are in accordance in different systems. That is, when formally identical laws governing the functioning of materially different phenomena exist." (Skyttner, 1996, pp. 39-40)

Universality of structure can be identified in various forms of stories generated by many different cultures around the world. These stories

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can be comprehended by a non-native audience based on inferences made on their structure alone. Therefore, the three-act structure is an isomorphism that is identifiable in various formats of narrative expression from screenplays to stage plays to television screenplays to novels and fables, etc. The goal hereby is then to formulate a theory capable of describing a narrative system that projects a *goal-oriented behaviour*, has *historical development*, *hierarchic structure* and a *control process,* where fine details can be ignored but universal patterns can be identified for use across different forms of narrative. Such narrative systems are also regarded as teleological since they move 'towards goals of self-realization' (Skyttner, 1996, p. 26), having a purpose to fulfil, thus designed in advanced as such. However, my main focus here is to describe how simple base rules produce complex but organized behaviour through the emergence of a story in *Complex Screenplay Systems*: [CCS].

## 3.2  Complex systems:  First order complexity

The definitions and applications of complexity theory are vast. To name but a few there is:  information complexity, algorithmic complexity, order and thermo-dynamical complexity (entropy), stochastic complexity, effective complexity, computational complexity, social complexity, hierarchical complexity, grammatical complexity, and so on. However, the field that interests us most here is

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that of narrative complexity. In complexity theory terminology, the three structural levels are the compositional, the transitional and the functional. A system's complexity is directly linked with the quantity of its components and the quality of their 'interrelational elaborateness' (Rescher, 1998, p. 1). The features attributed to complex systems include *non-linearity*, *indeterminacy*, *unpredictability* and *emergence* (Tsoukas and Hatch, 2001, p. 979). In the field of narrative complexity the application of complexity theory should be seen primarily as a metaphor. As I explained in the previous chapters, metaphors are useful since they serve as '*carriers*' of knowledge. The discussion revolving around screenplays as systems is, of course, metaphorical. A system has input and output and a central control unit that regulates its internal parameters and configuration. But a screenplay also has input (story-world configuration), an output (a story) and a regulator (its author). The application of complexity theory in narrative is a metaphor that will allow us to comprehend novel ideas through analogies and adds another way of understanding narrative synergetic dynamics. A narrative model is a conceptual model rather than a physical one, Hayes and Flower note:

> "A model is a metaphor for a process: it's a way of describing something, such as the composing process, which refuses to sit still for a portrait. People build models in order to understand how a dynamic system works, and to describe the functional relationships among its parts. In addition, if a model is really to help us to understand more, it should speak to some of the critical questions in the field of writing and rhetoric. It should help us to see

things in a way we didn't see them before." (Hayes and Flower, 1980, p. 390)

Larsen-Freeman and Cameron note that the power of complexity theory:

"...comes not only from its application to many different disciplines, but also from the fact that it can be applied to many different levels." (Larsen-Freeman and Cameron, 2008, p.1)

The fields of application are varied, the possibilities endless. D*escriptive complexity* deals with the factors that must be specified for the complete referencing of a system (Rescher, 1998, pp. 10-12). *Descriptive complexity* is a fundamental feature that will aid or deepen our understanding of a screenplay's functionality as a system. A screenplay that has six distinct interacting components of base importance, i.e. two characters, each having a motive and a goal to attain, is less complicated and has less complexity than a screenplay that has twenty characters, out of which four have a motive and a goal. These two screenplay systems share similar principles, behave similarly on the *deep* (compositional level) and *surface structure (functional level)* but their generative complexity in the *intermediate structure (transitional level)* differs fundamentally. The first screenplay can be generated with fewer narrative instructions than the second, meaning that the configuration of its story-world will be smaller, the interrelations between the characters will be limited, the logical possibilities for the unfolding of the story restricted, thus the scope of its

complexity will be bounded.  However, it is meaningless to quantify the generative complexity in a screenplay in order to analyse it further because such formalization is not applicable to the qualitative decisions that are encountered in narrative.  Neither the computations derived from such formal analysis will have any validity nor applicability in the optimization of the story-world since dramatic conflict in narrative arises from emotional investment rather than mathematical deduction.

The second most distinct feature of complex systems is *hierarchical complexity* (Reshcer, 1998, pp. 199-201), which relates directly to the coherence of the story on the surface structure.  An example of a hierarchical organization manifestation on the surface structure is the *scene sequences*.  *Scene sequences*, usually embedded within a three-act structure, are constituted of individual scenes linked together thematically, have dramatic beats associated with the interaction of characters, and have individual lines of action that serve as a step-by-step procedural for the forward progression of the story.  Hierarchical organization alleviates the underlying framework of the deep structure onto the intermediate structure in order for narrative complexity to be perceived and realized onto the surface level, 'all the while facilitating stability throughout the work' (Rescher, 1998, pp. 199-201).

A screenplay and its author must be perceived as a unified system that would not exist without the synergetic interaction of the narrative

components that constitute the whole. Thus, understanding the relationship between the parts and the whole is a fundamental step for the understanding of [CSS] holistically. Any work of narrative is intrinsically connected with its author, and the increased interdependence 'is the reason why a system might not work and may simply break down' (Paulos, 1998, pp. 42-44). During rewrites, a small but not well executed revision in the inner logic of a screenplay can cause tremendous informational turbulence in the unfolding of the story. Such is the sensitivity of the story's inner logic that sometimes the work may have to be reversed to its initial state in order for the story logic to start functioning again. That is why the *principle of rational economy* (Rescher, 1998, pp. 199-201) should always come into play in order to prevent unnecessary over-complications, that could drive the story towards a logical dead-end, in the story-world parameterization. Rescher calls this the '*risk coordination*' (Rescher, 1998, p. 201); the more complicated the story of a screenplay is, the greater the possibility for the suspension of disbelief is to break down. Unless the story is tremendously incomplete and the execution lacking coherence, then a more elaborate story-world parameterization must be introduced in order to patch up glaring plot holes. Authors create screenplays by recalling information from memory and by synthesizing the information following a complex structure. This emphasizes the fact that story-world configuration is, in essence, an abstract mental construct that spawns into life inside the mind of its author. Such a mental construct is

communicated to an audience through a [CSS], a real-world manifestation of a possible world.

The history of human enterprise, either cognitive or empirical, manifests a progression from *homogeneity* to *heterogeneity*, a process that is referred to as *Spencer's Law of Development* (Rescher, 1998, p. 200). It is attributed to the English polymath and philosopher Herbert Spencer who was the first to embrace a holistic evolution of systems, including human cultures and societies (Spencer, 2005). *Heterogeneity* proves to be a key feature of complex systems disputing the traditional approaches that put emphasis on average behaviour as the representative of the whole (Miller and Page, 2007, pp. 14-15). As Miller and Page (2007) explain, in social scenarios the differences cancel one another out. The behaviour of individuals can be eccentric or erratic when they are acting on their own but when they act under the umbrella of a group their behaviour tends to change, following a more predictable pattern. In groups, the differences between individuals average out, making it easier to predict their behaviour. This increased ability to predict the behaviour of an individual, thus identify with her by finding emotional connections and similarities, is why stereotypes, or averages, are still being used in motion pictures. The audiences are in a position to predict how the protagonist will react in a given situation, allowing them to connect with her on an emotional level, bringing a sense of equilibrium between the hero and the audience through

identification. However, in [CSS] interacting differences often result in a behaviour that deviates from the average, even though this fluctuation in *heterogeneity* still produces equilibrium at the end of the story (Miller and Page, 2007, p. 15). This phenomenon prompts us to redefine character traits, parameters and story thresholds in a way that will entice more *heterogeneity*, thus fully optimizing the components of a narrative work. But in doing so we must not abolish the use of a stereotypical profile for our protagonist if we want to establish an emotional connection between the protagonist and the audience. Too much *heterogeneity* may lead to alienation between the characters and the audience.

*Heterogeneity* creates an increased interconnection between the components, leading inevitably to *non-linearity*, a property of complexity where the response is disjointed with the cause. As management theorist Russ Marion explains:

> "...a change in a causal agent does not necessarily elicit a proportional change in some parameters it affects, rather it may elicit a response, dramatic response, or response only at a certain level of cause." (Marion, 1999, p. 6)

Character traits, as means of story-world parameterization, can be in constant change, which is an essential characteristic of complex systems, but retain their coherence throughout the screenplay. Scenes can be omitted, characters may be removed, re-worked, even re-

placed, motives and goals altered, but still the story-line retains its consistency and coherence for the duration of the fictional set-up.

Research from the computer scientist Steven Wolfram on cellular automata (Wolfram, 2002) brings to light how complexity is generated due to simple laws.   Certain features of complex systems, i.e. heterogeneity, interactions, feedback, optimization and variety, seem to be able to produce complex patterns of behaviour not only in the physical or social world, but to their extensions as well, the human cultures and the stories they create.  If we consider a homogeneous screenplay which only has a few and very similar characters with no dramatic needs, motivations or goals, we can easily understand how this story could be stagnant and not be enticing enough to an audience.  However, if we fuse more differences into the story, i.e. an increased variety of characters with different needs, motivations and goals, we are quickly driven to the conclusion that this model diverts away from averages due to the creation of more interesting situations. This generation of first order complexity from simple laws does not only characterize biological, social or organizational systems, but seems to be extended to the domain of arts, literature and motion pictures, where complexity tends to yield even more complexity, without upper limit.

Since input and output in a screenplay are regulated by the author, it is evident that complexity theory sees context (story) and the individual (character) as coupled: the story affects the characters and vice versa.  In relation to his, Larsen-Freeman and Cameron add that 'because of the coupling, the context itself can change in a process of co-adaptation between the individual and the environment' (Larsen-Freeman and Cameron, 2008, p. 7).  Our ability to think, understand and create abstractions in the realm of complex then is called *second order complexity*, and it is the main reason why the author must be regarded as an active component of the narrative system she creates, and to which I will turn my attention in the following section.

## 3.3    Abstracting about complex systems:  Second order complexity

The models currently in use that attempt to provide an explanation of how the brain works, and subsequently how we are able to think and theorize, are not sophisticated enough to reflect the entire set of complexities in it.  Our brains have hundreds of different parts, each specializing in a specific task, a fact that makes their mapping extremely difficult, if not impossible.   Even embryonic brains develop distinct clumps of cells that later are arranged into layers that will create thousands of links (Minsky, 2006, p. 147).  Since it is impossible to predict the behaviour or the actions of all neurons in the brain, a rather impractical task due to the large amount of input coming from

different sources, our brains can be regarded as complex systems, having the ability to reconstruct the complexities of our outer worlds (Bak, 2008, p. 22).

Complexity begets more complexity and this complexification seems to be an inherent property of the world surrounding us. Our everyday social interaction becomes more complex with each passing day. New and more complex models for the explanation of the existing ones have to be devised in almost every discipline. More complex systems actually demand the addition of even more complexities (Rescher, 1998, p. 6). During the twentieth century, all the models describing narrative composition seem to have been proven inadequate when it comes to answering the two fundamental questions of the opening chapter, affecting almost all forms of narrative. Thus, an expansion of the discussion from first-order complexity, i.e. screenplay complex system, to second-order complexity, i.e. its author, is imperative. The system and its regulator are intrinsically and hierarchically connected, with the system being the direct outcome of the processing of the regulator's characteristics, abilities, skills and qualities of emotional and intellectual predisposition.

The complex ways of abstraction and the derivative tools that are employed by authors for the creation of complex narrative works can be referred to as *second-order complexity* (Tsoukas and Hatch, 2001, p.

980).  Our ability to create complex stories has evolved over the course

of thousands of years without us being able at present to make a

hypothesis about the innate schema that grants us such an ability of

story abstraction (Chomsky, 1965, p. 27).  Our abilities to compose

works of narrative are based on mental structures in a similar way

Chomsky argues that our linguistic abilities are based on mental

structures of *rules and representations* (Chomsky, 1980, p. 49).  In regard

to this, Chomsky adds that:

> "Pragmatic competence underlies the ability to use
> such knowledge along with the conceptual system
> to achieve certain ends or purposes. It might be
> that pragmatic competence is characterized by a
> certain system of constitutive rules represented in
> the mind..." (Chomsky, 1980, p. 59)

Including the author as part of the narrative system he creates is not a

convenient necessity but an imperative step.  Without regulation of the

information entering a screenplay, a coherent story will never emerge

out of it.  For example, imagine an open-source screenplay where a

multitude of 'authors' alter it without a sense of goal-oriented direction

and regulatory central control.  The story that will be composited, if it

will be composited at all, will lack coherence and consistency.  Or

even, consider a story-generating software with the raw power for

creating thousands of story propositions and character traits,

converting them into story-world parameters and linking them into

stories.  But without an author's qualitative central control, these

narrative combinations will clump into coherent stories only by sheer randomness driven by cold probabilities.

### 3.3.1  The author as part of the [CSS]

Following from the above, in order for a screenplay system to function properly it must be regulated.   It has been shown that in complex systems found in nature e.g. insect colonies or wider economic systems, the use of *genetic algorithms* can give rise to complex computational patterns, taking the idea of a decentralized information process one step further (Mitchell *et al.*, 1996, pp. 4-6).   However, in a [CSS], the notion of self-regulation that applies to the whole of the structure, as another level of abstraction of the inherent second order complexity, is measured by the extent of the author's involvement (Tsoukas and Hatch, 2001, p. 990).   Using the metaphor of *functionalism* from the contemporary philosophy of mind (Sterelny, 1990; Putnam, 1988) that presents the human brain as a computational machine with the ability to 'run' a wide variety of 'software', we can refer to all the parameters of the story-world as the 'software' that is fed into the 'hardware', the author's brain.   After all, it is the author who, not only decides whether the story will have a cognitive or emotional interest, or what the plot and its execution will be, but also how the dialogue will be written.   As Kintsch notes:

"A story may be interesting because of the intricate pattern of events that are described, because of the surprises it holds, or because of the way it is being told. On the other hand, a story may be quite low in these cognitive components of interest, but may nevertheless appeal to us because of its direct emotional impact. Events may be interesting not because of the role they play in some complex cognitive structure, but because they are emotional themselves, in context as well as out of it." (Kintsch, 1980, p. 88)

And he adds that:

"A story may be interesting, however, not so much because of what is said, but how it is said. Given the same macrostructure and even the same microstructure, as far as it is possible... one text may be more interesting than another because of the style in which it is written." (Kintsch, 1980, p. 93)

The author thus acts as the regulator of the system, but for a system to qualify as functional it has to satisfy two criteria: first, to be designed, and second, to have a purpose (Sterelny, 1990, pp. 6 -10). However, by including the author as part of the screenplay system, we are faced with the problem of whether the system is rule-based or connection-based.

### 3.3.1.1    Rule-based systems

A rule-based system consists of a number of components that can be combined into patterns by a set of rules which define what is possible or not. The configuration of the story-world's components constitutes the 'state' of the system (Cilliers, 1998, p. 14). In order to configure the

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components, certain story rules, parameters and conventions need to be employed that will allow the transformation from one state to another. By assigning narrative values to the characters' personalities and traits, along with tangible definitions for their spatio-temporal and structural components, the author defines in a way the permissible states of the story-world. Having these values acting as the deep structure of the story-world, the narrative rules determine the various combinations that are permissible in order for valid syntactic propositions to be formed in the intermediate structure.

In rule-based systems the components conform to the inherent internal logic of the system, or its historical *path-dependence*, as we will see in [3.4.3.iv] and [4]. Examples of rule-based systems are chess, computers, and the Chomskian model of languages. The main characteristics of rule-based systems (Cilliers, 1998, p. 15; Serra and Zanarini, 1990, p. 26) can be summarised as such:

a) The story-world components are *ad-hoc,* defined in order to represent important concepts. This way, trivial details can be ignored, an aspect that allows the story-world to be effectively modelled. The logical relationships between the components form the production rules of the system.

b) The rules are regulated and implemented, by a process of centralised control that determines which production rules will activate and when.

c) Each of the components represents a concept, or a theme, known as the local representation of the system.

### 3.3.1.2 Connectionist systems

Systems belonging to this category are primarily based on a network of interconnected nodes. The sum of the inputs is calculated by the nodes in order to produce an output. Due to the extensive interconnection of the system's nodes, some nodes represent the input and some others represent the output. The values are determined by the synapses between the nodes which carry a certain 'weight', and can be either positive or negative (Cilliers, 1998, p. 17). Network models have shown that if the weights are 'wired' properly then the network has the ability to recognize patterns and exhibit rule-like behaviour (Fodor and Pylyshyn, 1988, p. 6). The most prominent example of a complex network is the human brain, not only because of its internal complex architecture, but also because it has the ability to abstract about both its own internal – *first order complexity* - and external complexity – *second order complexity*. The 'weights' of the synapses between the nodes determine the characteristics of the network as they have the ability to learn. This process of internal feedback that self-adjusts the neurons is what modifies the 'weights' to act either as inputs or outputs.

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### 3.3.1.3       Comparing rule-based and connectionist systems

By summarizing here the differences between the two models, the [CSS] can be categorised as a rule-based system and the author, the larger system engulfing a [CSS], as a connectionist model (Serra and Zanarini, 1990, pp. 26-27; Cilliers, 1998, p. 19).  However, it is not within the scope of this research to argue which of the models better encapsulate the ideas of complexity, or is the most effective one in doing so:

    i.    In a rule-based system the actual rules are governed by a centralised control that decides where, when and how the production rules will be activated throughout the system. In a connectionist model there is no central control and the processing of information is distributed over a wide network of components.  In a rule-based model if the central control fails the whole model fails as well.

    ii.    Rule-based models are based on parameters, i.e. characters and their motives or needs, whereas connectionist models calculate an approximate solution that satisfies any *a priori* limitations.

    iii.    In a rule-based model, the parameters have a definite and pre-defined value (local representation, story-world configuration), whereas connectionist models have

changing patterns over several nodes (distributed representation) (Cilliers, 1998, p. 19).

iv.   Rule-based models always tend towards a desired solution, satisfying along the way the parameters assigned to them, whereas connectionist models converge dynamically towards a solution that is not terminal, i.e. stream of consciousness.

v.   Rule-based systems have an internal structure that is *a priori* defined, whereas connectionist models are entirely based on self-regulation without external or centralised control.

The author infuses information into the [CSS], making the story respond to its immediate spatio-temporal boundaries, and pushing the [CSS] towards a purposeful termination: the conclusion of the story.  The actual information processing capacity of the [CSS] lies in the author's ability for mental representations.  In contrast, in a connectionist model like the brain, the input does not always come from external sources but also from within the body itself (Cilliers, 1998, p. 147).  According to Nobel Laureate Gerald Edelman, no two authors' brains are wired together in the same way:

> "The net result of developmental and experiential
> selection is that some neural circuits are favored
> over others... and each brain is necessarily unique
> in its anatomical structure and its dynamics."
> (Edelman, 2006, pp. 29-30)

For Edelman, the neurons, which form groups that 'fire' together, constitute the basic operating unit of the brain (Edelman, 1993). From this perspective, the brain acts as the regulatory information-processing agent of a system comprised of the brain itself and the body that engulfs it. In very much the same fashion, the author acts as the regulatory agent of the system comprised of himself and the [CSS], processing information that has been gathered from external stimuli and internally from within the [CSS], as long as any other information that arises from the synergy of the story-world components.

The capacity to generate models of elaborate internal information that allow the authors to transcend inherent perceptual limitations are what Miller and Page refer to as the ability of the authors to create 'possible worlds' through imagining or 'day-dreaming' (Miller and Page, 2007, p. 95). Thus, the internal computational capacity of the author is manifested in the story-line of the [CSS] when any problems created from the initial conditions are solved (Miller and Page, 2007, p. 137). Such problem solving relates back to issues of narrative logic arising from the story-world assumptions. In order for the author to manifest this computational ability, techniques representing input signals structurally are needed (Chomsky, 1965, p. 30), which is the subject of inquiry of chapter [4].

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Regarding the author as an encompassing hierarchical complex system (Minsky, 2006, p. 2) solves the problem of self-regulation in Complex Screenplay Systems. In real life, entities may be self-regulatory, happening aimlessly or out of sheer luck with strong ties to probabilistic notions of cosmic indeterminism. In narrative, however, 'the unseen hand of the author' (Levitt, 1971, p. 9) orchestrates the overall work. The author's regulatory role is to prevent the screenplay from being confined into a dull, self-repeating cycle, lacking dramatic conflict. Cilliers (1998, p. 91) brings up the example of languages as complex systems, that in order to enable communication they need to have a recognisable structure. In a similar way, works of narrative, which have distinct structures can also be regarded as vehicles of communication. Nevertheless, the system is never modified in its entirety and only elements of the system are subject to modification. However, this compartmentalized modification of the story-world components leads them to interact in ways that the whole system is ultimately affected. The result is not an entirely new system but rather a transformation of the old one. We can ponder then whether the evolution of screenwriting and cinema, both as autonomous but overlapping systems is a structural adaptation similar to the one encountered in languages or social systems. This structural adaptation may be necessary after all if the needs of the audience need be addressed in a clearer way.

In a previous chapter I argued that the authors produce stories with real-world analogies by including necessary information and ignoring trivial details that will overburden the screenplay. A simple example is this: the colour of a character's socks is not referenced over dialogue or in action description unless the socks play an important part in the unfolding of the story. A more elaborate example can be found in *The Usual Suspects*. The screenwriter chose not to give an overcomplicating motivation to Keiser Soze - the character played by Kevin Spacey - that would dilute the surprise of the ending. If an overcomplicating motivation had been implemented, that would demand specific referencing in dialogue and additional scenes in order to provide the necessary explanations to the audience. By doing this, the ending, as an element of surprise, could have suffered.

The authors proceed to problem solving in a step-by-step compartmentalization of the problems. A useful tool for segmenting relevant dramatic information is the *attractors,* or structural nodes, which were discussed in a previous chapter. If there are several successive attractors in a screenplay, and usually there are a few as figure [3.6] shows, the output produced by one *attractor* is used as input from the next, as it similarly happens in connectionist models. This way of information segmentation allows authors to have an increased level of control over the story's logic and plot through utilization of a

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hierarchical system, which is then 'decoded' by the audience.    As

Thorndyke notes:

> "The grammar assumes that stories have several
> unique parts that are conceptually separable,
> although in most stories the parts are rarely explicitly
> partitioned and are usually identified inferentially by
> the reader.  It consists of a set of production rule
> providing the rules of the narrative syntax and is
> independent of the linguistic content of the story.
> The successive application of these productions in
> generating a representation of a story results in a
> hierarchical structure that has intermediate nodes
> abstract structural elements of the plot and as
> terminal nodes actual propositions from the story."
> (Thorndyke, 1977, p. 80)

This is a process of decomposition of a complex story into more

manageable parts, which are then carefully configured and

'manipulated' in order to function harmonically between them as part

of a whole.   As Jean Mandler comments:

> "... the kind of hierarchy describing story structure is
> that of a collection, not a class inclusion system.
> Each unit is a part of the next higher unit.   For
> example, an attempt is not an example of, or a
> member of, a goal path: it is part of a goal path.
> Related to this part-whole nature of the hierarchy
> are the connections, or relations, between units.  As
> just mentioned, most of the relations are casual
> ones, but some are temporal and some even
> atemporal." (Mandler, 1983, p. 9)

Some solutions will be the product of both rational and emotional

thinking on behalf of the author, since our minds are 'always affected

by our assumptions, values and purposes' (Minsky, 2006, p. 5).   Thus,

same ideas will be treated differently from different authors. As Miller

and Page explain:

> "This implies the existence of solid and stable
> building blocks that encapsulate key parts of the
> real system's behaviour. Such building blocks
> provide enough separation from details to allow
> modelling to proceed." (Miller and Page, 2007, p.
> 35)

Drawing from this, no further analysis is needed within the context of this

research in order to entirely map the author-[CCS] relationship, an

inquiry that seems to belong to the fields of neuroscience and

cognitive psychology. As Cilliers (1998, p. 92) notes, 'we can talk about

the function of the endocrine system of a lion with reference to the lion,

but then it is difficult to simultaneously talk about the function of the lion

itself.'

## 3.4    Complex Screenplay Systems [CSS]

A complex system is constituted by a large number of autonomous

components and simple processes of various hierarchical levels. Non-

linear interactions and interrelations underlie the system's emergent

behaviour that can be understood as the derivative consequence of

the holistic sum of the components' interactions that are embedded in

it (Marion, 1999, p. 28; Cilliers, 1998, p. 91; Levy, 1992, pp. 7-8). A

complex system has 'more possibilities that can be actualised'

(Luhmann, 1985, p. 25) than from what are actually being actualised in practice.

Therefore, a story can be regarded as the emergent phenomenon of the non-linear, forward-thrusting, cause-and-effect interactions between the protagonist, the antagonist and rest of the narrative components. The characters' motives, dramatic needs and goals, personality flaws, inner, interpersonal and outer conflicts are also regarded as dramatic components complimenting the characters. These story elements are examined under the spatio-temporal and qualitative limitations of the story-world's plot, theme and structure. The narrative components adhere to a tight inner story-logic and are manifested onto the surface structure through dialogue and the actions/reactions of the characters. The components, and the rules that govern their interactions, constitute a *Complex Screenplay System* [CSS] with the story being the emergent derivative of their synergetic interactions.

The basic properties of [CSS] (Marion, 1999, p.29) are, first, the whole represents the 'bigger picture' that is unavailable to its parts, second, the whole is more functional than its constituents or the sum of the constituents' capabilities, third, the whole carries a lot of information, significantly larger than that of its parts, and fourth, the whole maintains its structural integrity throughout.

Figure [3.3] represents the story-world of a [CSS], where (SU) denotes the surface structure, (PR) the protagonist, (AN) the antagonist, (PC) the primary characters, (SC) the secondary characters, (g) their goals, (m) their motives, (c) their conflicts, (VST) the vertical structure limitations, (HST) the horizontal structure limitations, (SL) the spatial limitations, (TL) the temporal limitations. The thick lines represent direct interconnections or interrelations and the dashed lines represent indirect relationships, underlay by the forward movement and the theme of the story.
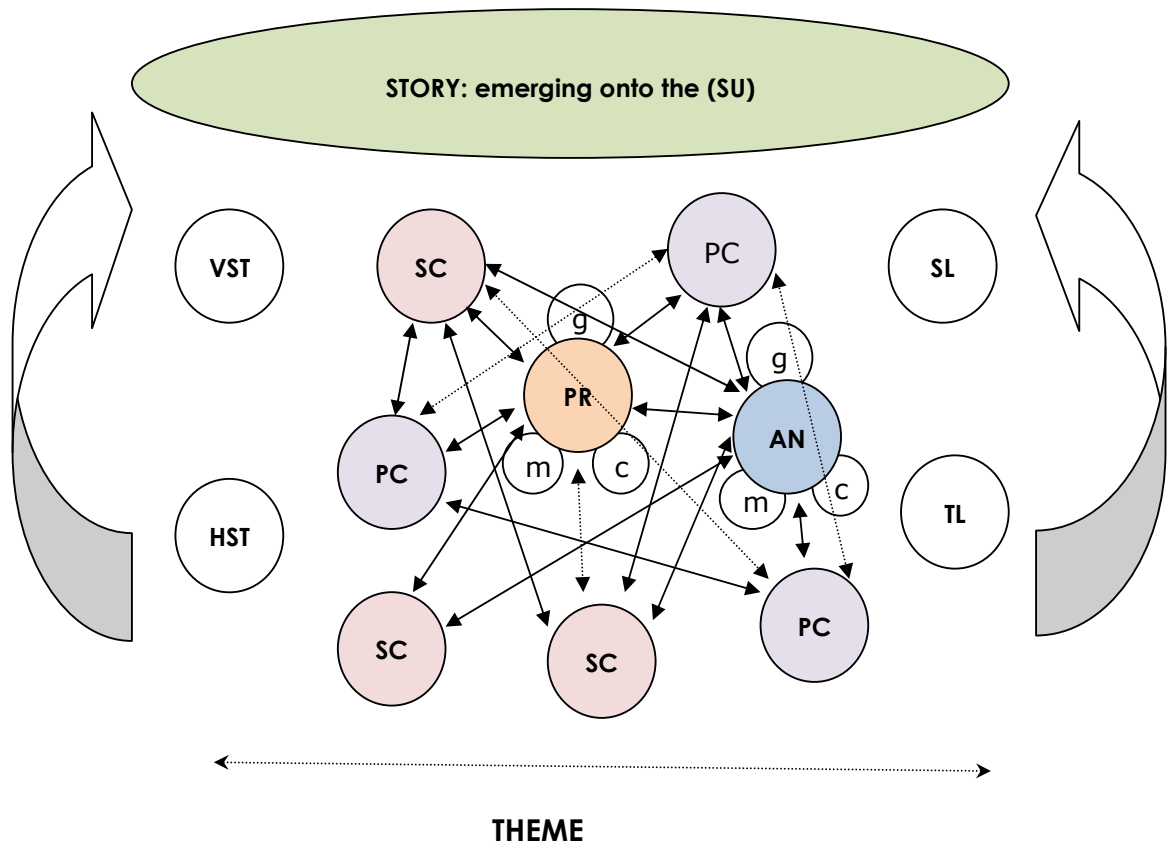


Figure [3.3] - The story-world in a Complex Screenplay System

In the above schema, the story emerges from the dynamic interactions of the dramatic components, showed in the coloured circles, that adhere to spatio-temporal limitations and abide to story rules set by the author. Sometimes in screenplays, the primary and secondary characters do not have goals or dramatic needs simply because there is not enough time to explore them on the paper and on the screen. Another reason is that motion pictures usually revolve around the story of the protagonist. The interaction between the components creates dramatic conflict, the most fundamental property of drama that could be mental, psychological, emotional or physical. The direct confrontation between the protagonist's dramatic goal and the overall agenda and goal of the antagonist, who is not always the 'bad guy', create a cause-and-effect forward progression in the story. If the protagonist does not have a tangible outer dramatic goal that needs to be achieved by the end of the story, an inner conflict that will create intrapersonal dynamics will have to be weaved into the plot instead. This is the typical set up of 'character-driven' stories where interpersonal relationships are the primary sources of dramatic conflict. As opposed to plot-driven stories where the protagonist's goal functions in the foreground, in character-driven ones the protagonist's goal is not necessarily tied to that of the antagonist's or functions in the background. A typical example of a character-driven story where there is no tangible outer dramatic goal is *The Reader* directed by Stephen Daldry.

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### 3.4.1 Characteristics of Complex Screenplay Systems [CSS]

Following from the previous propositions in this chapter, and figures [3.2] and [3.3], I hereby present the characteristics of complex systems (Cilliers, 1998, pp. 2-4 & pp. 119-123; Serra and Zanarini, 1990; Nicolis and Prigogine, 1989) that apply specifically to a [CSS] as follows:

a. **The [CSS] comprises of a large number of elements.** As I argued in the beginning of [3.4], all the characters in a screenplay, along with their motives, goals, needs, flaws, conflicts, and the variety of limitations and parameters assigned by the author but also the intellectual and emotional capacity, predisposition, skills and abilities of the author himself, constitute the dramatic components for the configuration of a story-world in a [CSS].

b. **The dramatic components interact dynamically**, affecting with their interactions the overall behaviour of the screenplay that evolves, or changes, as a consequence. The interactions and relations between the components do not necessarily have to be physical but can also be informational, i.e. the exchange of information is regarded as a dynamic interaction, and the interactions are also subject to change. Characters in a story are drawn into a physical, mental or emotional conflict because their needs and goals are conflicting. Information is always

exchanged through dialogue, subtle body communication, or even physical activity. These interactions are not static but dynamic as relationships change over the course of the story, goals are renewed or replaced, dramatic needs are met or not, new allies or enemies are being made.

c. **The interactions are rich**. The characters are constantly being affected and affect other characters with their actions or decisions. The author has to devise the plot in such a way that these interactions are fully facilitated, all the while ensuring that they serve the end purpose of the story. In other words, the dramatic components in a [CSS] have not individual significance, but obtain significance due to their rich synergetic interactions.

d. **The interactions are non-linear**. Small decisions or actions of the characters in ACT I can have large effects in the latter parts of the story and its structure. *Non-linearity* entails that small changes in content or context cause large informational disturbances in the structure and plot of a screenplay, as opposed to *linearity* where small changes only cause small disturbances that can be easily addressed. An inherent and tight cause-and-effect connection exists between the inner logic and the forward progression of the story, causing informational turbulence

along the way of the story's historic path.  Removing an element, such as a primary character that has a certain function and serves a purpose, or altering a character's personality or behaviour can cause specific parts of the [CCS] to cease being functional, i.e. plot holes are created.  In this case the author needs to implement a different set of story assumptions and parameters in the plot in order to address the plot holes that in turn cause more informational turbulence requesting further creative problem solving and so on.  There is always the danger that re-writes can cause even more problems than they set out to solve.

e. **The interactions also appear to be *asymmetrical***, meaning that information in a screenplay is distributed unevenly. This is usually the case with ACT I introductions where large chunks of dramatic information are implemented, aiding the set up of the characters and their fictional surroundings.  As I argued before, a [CCS] poses as a modelled approximation of society, where extraneous details have been ignored.  Social systems are often regulated by 'dynamic relations of power' (Cilliers, 1998, p. 120) that ensure the asymmetrical distribution of information among relations, i.e. uneven distribution.

Furthermore, one can assume then that the same dynamics that keep complex societies moving, i.e. *non-linearity*, *asymmetry*, competition and power, are encountered within the fictional boundaries of a [CSS] as well. In order for dramatic conflict to be generated in a story, fictional characters have to exude power in a similar fashion to their real-life counterparts. *Non-linearity* and *asymmetrical* distribution of information are preconditions for complexity and this is why complex systems can present 'a catastrophic behaviour, where components affect each other with a domino effect' (Bak, 2008, p. 33).

Thus, it can be inferred that story is the immediate emergent derivative of many simple interactions between components that respond to relevant information. When the holistic behaviour of the system is investigated, the focus shifts from the individual components to the structure of the system in whole. As I will explain later, the action schemas cluster unevenly distributed information based on functionality. Then the *plot algorithm mechanism* [PA] transforms the information that is available to the components locally to a symmetric structure encompassing the totality of the screenplay and which adheres to vertical and horizontal structural limitations, as

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these are represented in figure [3.3]. This way bifurcation story alternatives, based on the transformation of information from the deep and intermediate structures onto the surface structure, are created.

f. ***The interactions have a short range***. Usually in a [CSS] the characters interact between them either directly or indirectly, as figure [3.3] shows. However, direct exchange of information occurs when the interactions take place between immediate characters, while indirect interaction can take place between characters that never interact. This immediacy for the exchange of information does not forbid long-range or indirect interactions between characters nor wide-ranging influence of the components, because of the richness of interactions in [3.4.1.c] and their *asymmetric* nature in [3.4.1.d].

Nevertheless, in a diverse and multidimensional [CSS], dramatic components are grouped together under a common theme, relevant information or just because they have a similar function in the story, i.e. a wide diversification of characters with common goals but different dramatic needs temporarily unite in order to fight against a common enemy as in Kurosawa's *Seven Samurai*. These groups are usually interconnected in non-

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linear ways and although this interconnection can be sparse, i.e. the characters are based in different locations.

g. As I argued in [3.1.1.l,] **the *feedback process* is an essential aspect of complex systems** and sometimes the effect of an activity can feed back onto itself, either directly or indirectly, in a positive or negative way, creating this way some sort of closed loops between interactions. For example, under stressful conditions the protagonist of a story is forced to make a decision and act accordingly, creating an event that later can come back to haunt him with catastrophic results, detracting him from achieving his dramatic goal.

h. *Another important aspect of **complex systems** is that they interact with their environment in a number of ways,* i.e. the author is regarded as part of the [CSS] making the distinction for clear borders between the author and the system difficult, or under certain conditions, dysfunctional. The teleological purpose of a [CSS] is always influenced by the author, who acts as the system's designer and regulator. The characters in a screenplay interact with their immediate environment, acting within the spatio-temporal boundaries of the story-world they inhibit, allowing the audience to create the necessary benchmarks. The story-world is under the constant

influence of the author and the teleological purpose she wishes to implement into the story.

i. Even though **complex systems operate in a state of equilibrium**, the stagnation that sometimes is associated with states of equilibrium might mean the end of the system's functional process. In order to keep a [CSS] from becoming stagnated, the author needs to infuse diverse information into it in order to achieve a higher level of heterogeneity. The infusion of enough heterogeneity will diversify the screenplay significantly, preventing it from reaching a state of 'informational death', and becoming a recycled formulaic story.

j. **Complex systems have a history**. A [CSS] evolves over time and this informational evolution is tightly associated with its past states, which deterministically dictate the screenplay's present and future states. As I will explain in chapter four, the logical historical path of a [CSS] dictates, and even narrows down, the forking path options a character can follow to get from *story-beat A* to *story-beat B*. This deterministic property is tightly associated with the initial configuration of the story-world parameters and its structural and spatio-temporal limitations. Since an author has to adhere to the initial story-world parameterization, or adjust it accordingly throughout the process, while always

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remaining mindful of the non-linear aspects of his decisions, the forking-path possibilities and options narrow down from being infinite to being discreetly finite.

In a simple example, based on story-world parameterization and the historical path of past events, the protagonist finds himself trapped in a room, where the only exit appears to be either through a barred window or a locked door. The protagonist has been wounded on his arm making the possibility of his escaping through the barred window not a viable one. That constitutes the escape through the door as the only option even though the door is locked. Before removing the injury parameter from the protagonist's acquired state due to previous events, the screenwriter needs to ponder what the repercussions of such action might be and what effect such an action will have on the rest of the story, especially if the injury aspect has an important function in it.

k. Even though the distribution of information throughout the system is asymmetrical, ***the system itself exhibits recursive symmetries*** between scale levels (Tsoukas and Hatch, 2001, p. 988). In a [CSS], the three-act structure tends to repeat in smaller scales at several levels. For example, an entire act has a distinct three-act structure which is

comprised of several scene sequences which also have a three-act structure, with the plot points separating the different stages of development. Similarly, an individual scene can also be broken down to three acts, all the way down to individual dramatic beats that comprise it (McKee, 1999, pp. 35-41).

A useful grid that summarizes, and compares, the characteristics of a [CSS] to music is shown in figure [3.4]:

| Field | Narrative | Music |
|---|---|---|
| **Agent** | Characters | Music notes |
| **Heterogeneity** | The characters' diversity, needs and motivations | Pitch and rhythm |
| **Organization** | Three-act structure | Music score structure |
| **Adaptation** | Configuration of the story-world [SW] | Elements of music, i.e. rhythm, harmony, melody, structure, form, texture |
| **Dynamics** | Semantics, characters' interactions based on the [SW] parameterization and the desired story output | The arrangement of notes, rhythm and beats for the desired output |
| **Emergent behaviour** | Stories | Melodies |

Figure [3.4] – A complex system model in narrative and music

The symmetric plot structure mentioned in [3.4.1.e] resembles Syd Field's ideal structural three-act paradigm (Field, 1984a), which I have expanded as shown in figure [3.5]. The additional structural points, pinches 1 to 4 and pinches A & B, are dramatic turning points with lesser impact onto the storyline, and are also referred to as *attractors* or structural nodes. Their functionality is to fragment the story in such a

way that will assist the audience to follow it, and is explained by

Haberlandt:

> "...in recall situation a reader encodes a story by its episodes [acts]. Specifically, an episode boundary hypothesis of encoding was formulated. It predicts that the 'load' of encoding should be highest at or near the boundaries of an episode. At the beginning of a new episode, new memory locations must be 'initialized' either to encode a new protagonist or a new perspective of an old protagonist. And at the end of the episode the reader should 'organize' the information of that episode into a summary or micro-proposition and transfer it from a working memory to a long-term memory store." (Haberlandt, 1980, p. 102)

The reason Syd Field's three-act paradigm has become a standard in

the Hollywood studio system is that audiences find it easier to connect

and remember how the story unfolds on the big screen. In relation to

this, Mandler and Johnson assert that:

> "In general, the more a story conforms to an ideal structure, the better recall will be. (1a) A story whose surface structure contains all the basic nodes of an ideal structure will be more accurately and extensively recalled than a story which lacks one or more nodes. (1b) The more the sequence of sentences in the surface structure follows the sequence of an ideal structure, the better recall will be... When the *theme* of a story was moved from its normal place to the end, both measures suffered. [Thorndyke's] definition of 'theme' is complex and difficult to translate into our terminology; the displacements involved both goals and outcomes and seem to have removed many of the causal connections between the remaining propositions. Nevertheless, [Thorndyke's] findings support prediction (1b), that recall is better when the sequence of propositions in the surface structure follows the ideal structure. [Thorndyke] also found that when the theme propositions were

omitted altogether, recall was even worse and ratings of comprehensibility were even lower (prediction 1a)." (Mandler and Johnson, 1977, pp. 132-134)
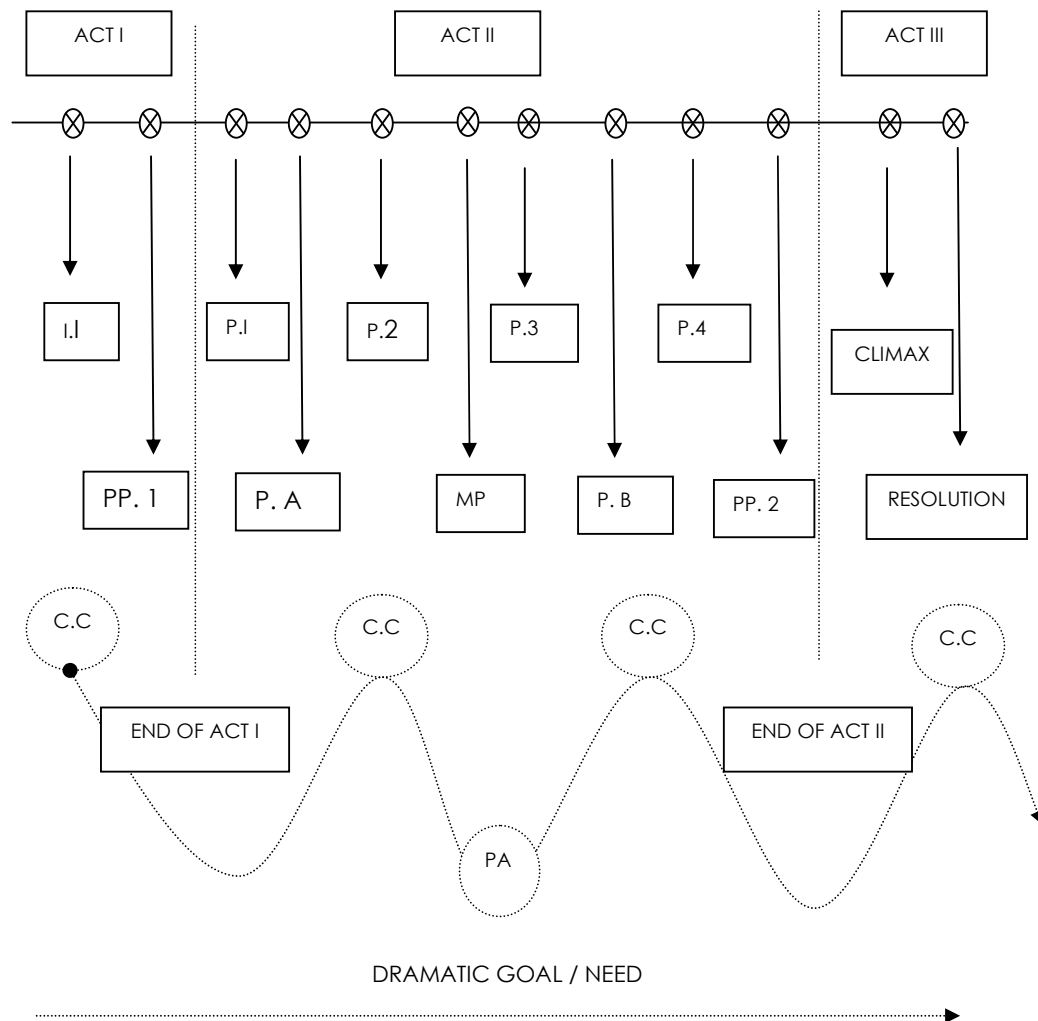


Figure [3.5] - Expanded three-act structural paradigm

In figure [3.5], (I.I) refers to the inciting incident, (PP.1) to plot point 1, (PP.2) to plot point 2, (P.1 to 4) to pinches 1 to 4, (P.A) to pinch A, (P.B) to pinch B, (MP) to the midpoint. All these structural nodes represent *attractors* around which relevant information is clustered through the

action schemas. The *attractors* localise thematically grouped information based on their functionality in the plot. All these clustered components are represented by the reference (C.C.) while the reference (PA) refers to the *plot algorithm mechanism*.

Pinches 1 to 4 and A & B denote less severe, in terms of overall impact, dramatic points and are used for the structural and cause-and-effect progression of the story. The induced information around the attractors has to be distributed symmetrically as the story unfolds, and following the author's logical problem-solving decisions, must be organised and computed in such a way that will bring the screenplay system to a state of equilibrium without sacrificing its heterogeneity. This diversity and heterogeneity of the characters and the dynamic nature of their interactions eliminates the possibility 'of concentrating our observations down to a narrow number of mathematical descriptions' (Bak, 2008, p. 29). Another function of the *attractors* and the extended three-act paradigm is that they assist the screenwriter to create suspense by manipulating the structure of the story. By weaving in plot twists and emotional moments the author grabs the audience's attention by shifting the pace of the story and the sequence of the unfolding of the events. Due to the indeterministic nature of *Screenplectics*, and the infinitude of possibilities that occur in a [CCS], it may never be possible to predict the emergence of specific stories even if the initial

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assumptions for the story-world configuration are taken into consideration.

### 3.4.2  Organised complexity in Complex Screenplay Systems

The exploration of the emergent properties of the dramatic components onto the surface structure is called *organised complexity* (Miller and Page, 2007, p. 49) with the emphasis being on the interrelation of the components that allow them to co-exist without cancelling each other out.  Organization has a function and a purpose in the designing and controlling of screenplays.  In a story, similar themes that will effectively connect the various characters must be explored and effective ways to interconnect the characters' goals, motives and agendas must be contrived.  Such a configuration will maximize the overall dramatic conflict without leaving 'loose' or 'unexplored ends.'  The subsequent positive interrelation of the dramatic units, in conjunction with the clustering of relevant information, and the *plot algorithm*, transfer, transform or generate dramatic information, giving rise to a coherent and consistent whole - the story.  However, for the story to be allowed to emerge, the screenplay cannot be fed with meaningless or random bits of information, as the random shuffling of information will not produce a purposeful story-line.

In chapter 4, I will also present the analysis between the relation of the dramatic components with the object they describe, without separating them from the structure they are embedded into, and without differentiating the syntax of *Screenplectics* from the meaning of its syntactic elements. Even though the implementation of the syntax and the meaning of the syntactic elements on paper usually differentiate when a screenplay is written, the representation remains the same due to the tight relationships that exist between the dramatic components in question. This implies a causal relationship between the internal state of the system with its immediate environment, the boundaries of the story-world, and the external system, the author. It also implies that the history of the system, or its past states, is 'a vital step to its future progress' (Cilliers, 1998, p. 11). In order for the reader to better understand the importance of structure and the organization of information in a [CSS], I hereby present two graphs, one picturing an 'unstructured' system in figure [3.6] and the other one picturing an 'organized' system in figure [3.7].
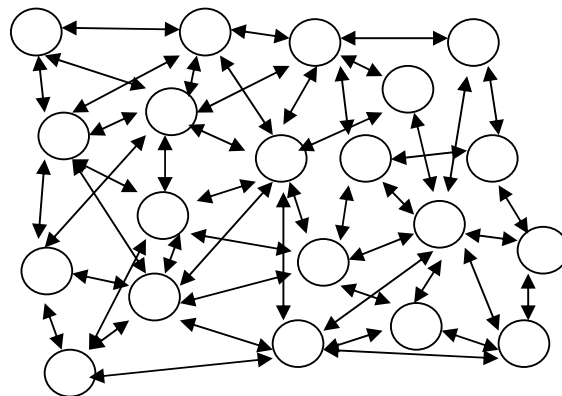


Figure [3.6] - An 'unstructured' system (Minsky, 2006, p. 181)
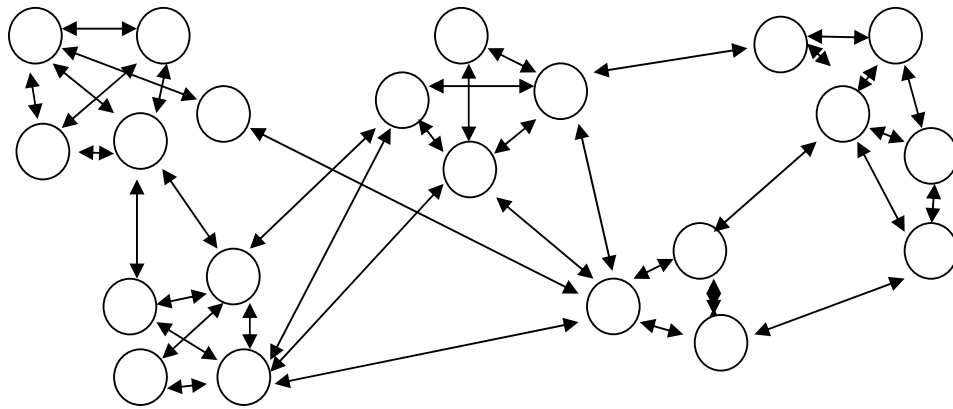
Figure [3.7] - An 'organised' system with clustered information (Minsky, 2006, p. 181)

### 3.4.3 Contributions of complexity theory in [CSS]

Even though it is too early to evaluate the actual contributions of complexity theory (Miller and Page, 2007, pp. 214-217), however, the approach I hereby propose can shed light on new possibilities such as:

i.     Better understanding on the emergence of stories.

ii.    The dynamic nature of the dramatic components' interactions. Emergence requires them to maintain a consistent and coherent functionality, tied up thematically and clustered based on relative information.

iii.   The thematic, or clustered, functionality allows us to better understand the non-linear nature of interactions and the repercussions a change might have on the system.

iv.    A story-world brimming with heterogeneity will place characters in a *path-dependent*, or *phat-dependent*,

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fictional framework in which past decisions based on the initial parameterization of story values will determine future possibilities. Even though in chapter 4 I will explain historical *path-dependence* and *phat-dependence*, with their difference being in terms of the order of events happenstance, I hereby present their definitions in order to assist the reader:

> "A process is *path-dependent* if the outcome in any period depends on history and can depend on their order. A process is *phat-dependent* if the outcome in any period depends on the set of outcomes and opportunities that arose in a history but not upon their order." (Page, 2006, p. 97)

v. Meanings are generated through a system of *differences* that govern the relationships between the components. For example, the protagonist's motive to satisfy a dramatic need or achieve a dramatic goal only acquires meaning because of the antagonist's need or agenda to oppose him or prevent him from achieving it, such as in *Die Hard*. The interconnection between the protagonist and the antagonist's need is therefore crosswise, and adversative. This antithesis, or *difference,* in the context of the dramatic components, seems to be an integral aspect of stories in order for conflict to be generated as shown in figure [3.8].
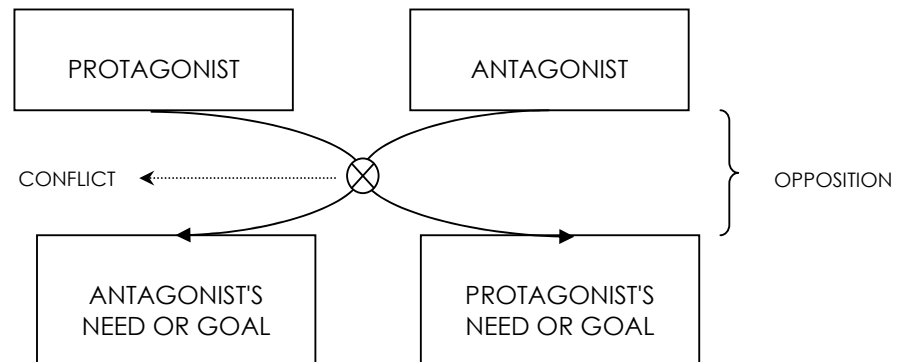
Figure [3.8] - Differences give rise to meanings, and therefore to dramatic conflict

vi.   The [PA] mechanism, a cognitive intermediate process, transforms local information, and meanings, eventually allowing stories to emerge.

vii.  Modification of the dramatic components for functional optimization through a process of feedback allows, as we will see in the epilogue, a convergence between underlying themes and clustered relevant information that produces competent outcomes.

## 3.5   Emergence in Complex Screenplay Systems [CSS]

So far, I explained that deep level interactions between dramatic components give rise to the top level coherence we call *story*. For this emergence to occur, a certain level of hierarchical structure and organization must exist, rendering complexity at large into more

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manageable building blocks.  It is therefore the structure that facilitates stability in hierarchical complex systems, allowing them to further evolve (Rescher, 1998, p. 12).  However, in systems with high order of stability and rigid structure nothing novel can emerge (Horgan, 1995, p. 76).  Complexity cannot arise in an environment dominated by the absence of any lawful order, or chaotic randomness, therefore, for stories to emerge a distinct framework of narrative principles must exist.

### 3.5.1  How information affects the dramatic components

We are currently unable to understand how the complexity of human creativity, through the evolution of cognition, manifests itself in the cinema, the theatre, the arts and literature, and other creative endeavours.  A work of narrative is not a bundle of isolated elements 'strung randomly together' (Egri, 1960, p. 89).  A complex screenplay system [CSS], in which elements have been fused together, has the ability to generate information from a given input of dramatic parameters due to their qualitative *difference* in their interrelations and interactions.  The analysis of the individual dramatic components as autonomous functional units, or subsystems, will never produce the necessary conclusions that will assist explaining the whole and the emergence that occurs due to their deep interactions.  Miller and Page explain that the notion underlying emergence is that:

"...individual, localized behaviour aggregates into global behaviour that is, in some sense, disconnected from its origins. Such disconnection implies that, within limits, the details of the local behaviour do not matter to the aggregate outcome." (Miller and Page, 2007, p. 44)

The highly diverse information in a screenplay system affects the components either directly or indirectly. When the components are affected directly, i.e. characters, then they need to take an action or react to one. When they are affected indirectly, the action, or the reaction, could be realized further into the story-future. This realization of an action into the future is called *foreshadowing* and *pay-off*. *Foreshadowing* means that certain information poses as a visual or oral clue that sets a specific action in motion in any part of the screenplay. *Pay-off* means that the implementation of that information has paid off (Seger, 1994, p. 102). One of the greatest examples of cinematic *foreshadowing* and *paying-off* takes place in *Raiders of the Lost Ark*, the first Indiana Jones film. In the film, Indiana Jones manages to escape the thugs pursuing him by jumping into an airplane as it is taking off. He then sees a snake on his lap, and says: "I hate snakes. I hate 'em!" This unique character quirk will lead to its *pay-off*, the climactic and suspenseful scene where Indiana Jones has to deal with thousands of snakes in order to get to the Ark with him saying: "Snakes. Why did it have to be snakes?!" Another great example of *foreshadowing* and *paying-off* comes from the second Indiana Jones film, *Indiana Jones and the Last Crusade*. In one of the first scenes of

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the film, Indy is lecturing a group of archaeologists, delivering the line: "X always marks the spot."  Later in the film, a secret passage is discovered in the middle of a library where the letter X is embedded into the mosaic above.

The initial information pertaining to the story-world [SW] is infused into the [CSS] by the author.  However, as the story progresses new information is created in the form of bifurcating paths and story options for the characters.  This information is based on the inner logic of the [CCS] along its historic path and abides to the internal story principles for the consistent continuation of the story.  The current and future states of a story, along with the actions and decisions of the characters, depend on the path of the previous states, actions, or decisions that link all the way back to the initial story-world configuration.  Two screenplays with identical story-world configuration may have their stories unfolding in an entirely different way 'if they have different histories' (Cilliers, 1998, p. 107).  This is more often the case with unproduced screenplays where various screenwriters have produced variations of a story based on the initial premise given to them by the studio, or the producer, such as the examples of Kevin Smith's, Dan Gilroy's, and J.J Abrams versions for a Superman sequel. As Cilliers explains:

> "The history of a system is not merely important in
> the understanding of the system, it co-determines
> the structure of the system...  The 'effects' of the

> history are important, but the history itself is continuously transformed through self-organising processes in the system – only the traces of history remain, distributed through the system." (Cilliers, 1998, p. 108)

For creating effective *foreshadowing* and *pay-off* events, and for solving any logical problems that may have arisen, the author clusters and compartmentalises the overall procedure that leads to the gradual analysis and solution of the problem. This compartmentalization process allows authors to make logical decisions that solve story problems while abiding to the local principles of the story. This way, additional information is created as multiple components in different hierarchical and spatio-temporal levels are engaged, but it is distributed in various parts of the script. This implies that the emergence of stories, or top level coherence, is not generated locally because of the specific characteristics of a discrete component but holistically by the entirety of the screenplay system. As Cilliers indicates:

> "Saussure presented us with a system of distributed semiotics by arguing that the meaning of a sign is a consequence of its relationships to all the other signs in the system. Meaning is therefore not a specific characteristic of any discrete unit, but the result of a system of differences. In order to generate the meaning of a sign, not only that sign, but the whole system, is involved – the meaning is distributed." (Cilliers, 1998, p. 81)

The interactions between the characters carry information between them that gets distributed throughout the screenplay. The interrelations

add a tangible meaning to the functional existence of the narrative components within the boundaries of the intended story-world, with this informational flow being of course symbolic.   Without the organization of information there would be no stories.   So to understand the whole in relation to its parts and the parts in relation to the whole, one first has to understand what is the principle of organization that governs the order and arrangement of the parts that unifies them into an intelligible whole.   As Levitt comments "...to understand a play is to understand what unifies the action of it: plot, character, theme, or some combination of these" (Levitt, 1971, p. 19).

The principle that moves a story forward and progresses it spatio-temporally is the need of the hero to achieve his dramatic goal.  So the attainment of a goal seems to unify and streamline the action in a screenplay, linking the characters, their goals, needs and motives, the plot and theme, under a common roof.   In order for an author to be able to perform valid inferences that 'will maximize inferential acuity and minimize inferential error' (Bradley and Swartz, 1979, p. 198), she first must understand the rules of inference in terms of inner dramatic logic.  By understanding the rules, the author is able to analyse the premises of the story and draw conclusions, checking whether there are any errors in the plot, and therefore, infer what comes next.

Inner story logic differs in principle from formal logic as it relies on preference. There are different strategies and approaches in different genres and narrative formats for blending together various events and actions, or distributing functions between characters. An example of this are the *character archetypes* (Vogler, 1998) as they do not involve absolute and rigid 'either-or' propositions that are usually encountered in formal logic (Herman, 2002, p. 23). Thus, the authors make probabilistic inferences based on the initial parameterization of the story-world [SW] that will lead to a decision of how to allow the story to progress based on a principle of continuity without disregarding the historic path, or past, of the story (Cilliers, 1998, p. 40; Saussure, 1966, p. 74). Such a decision will be consistent and non-contradictory as it derives directly from the [SW] premises in a deductive way. The story's flaws, plot holes and contradictions can be minimized if the screenwriter constantly checks the validity of her inferences, without neglecting to check the validity of the initial [SW] premises. The analysis of her conclusions and premises presents the author with 'bifurcation points' (Prigogine, 1992, p. 24) where new probabilistic choices and solutions for the continuation of the story appear.

Even though the initial [SW] configuration is determined by the author the future of a story is not always. *Bifurcation points* show that new structures need to be developed within a [CCS] in order for it to accommodate new ideas that push the story to a different direction,

allowing it all the while to progress without disregarding its historic past.

By not disregarding the story's historic past, an emergence of causality occurs where causes and effects 'fit together when they are part of an individual's plans and goals' (Branigan, 1992, p. 29).  So for the story to retain its continuity and consistency it must have gone through several 'bifurcation points' that have lead successively to the present state.

### 3.5.2  Internal complexity of the dramatic components

The dramatic components hold locally all the necessary information that will be collectively processed by the [CSS] for the story to progress. This shows that the dramatic components themselves are not simple or simplistic but 'appear to be rather complex at their own scale of operation' (Atay and Jost, 2004, p.1).  This allows the coordination between components and eventually leads to coherent structures at higher levels.

This high level coherence comes with a cost to the components since some of their properties have to be suppressed in order for the screenplay to function as a whole.  For example, authors do not always reveal the entire back-story information they have created for the characters.  They have to be selective and must only reveal the necessary.  In other words, there is *visible back-story* and *invisible back-story*.  A typical example of visible back-story can be found in *Back to*

*the Future*.  As the story unfolds, the audience learns that Marty McFly wants to be a rock star, his father was a loser his entire life, and that the clock tower has stopped functioning during a big storm.  Another two examples of visible back-story come from *Die Hard* when the audience finds that John McClane's wife has moved to Los Angeles to pursue her career, or that he is scared of flights.  The visible back-story is conveyed through dialogue exposition or flashbacks and its function is to dimensionalize the characters and add depth to the main story.  It is also a great technique for revealing secrets and was identified as far back as Aristotle (1996) in *Poetics*.  The function of *invisible back-story* is to help authors build a closer relationship with their characters, make them more original and motivate their choices in the story.  *Invisible back-story,* more often than not, does not appear in the screenplay.  It can account from where the characters grew up, where they went to school, their biggest fears, likes or dislikes, the loves of their lives, etc.

Deciding how much back-story will be revealed can be seen as the larger system determining the behaviour of the individual components.  Sometimes the prerequisites of a story impose what information will be revealed and what will be omitted.  But the same happens in our societies, where laws, rules and regulations are 'imposed' to individuals from government bodies that are responsible for the smooth and effective processes of a specific subsystem (Atay and Jost, 2004, p. 2), i.e. the stock market, or a football league.  This top-down regulation of

information reduces the degrees of freedom of the components and creates a predictable pattern for their behaviour as disruptive information can be controlled more effectively. The regulation of the system's resources also allows the components to function more effectively, utilizing their coordination, making high level coherence and therefore, emergence, possible.

By infusing information into the system through the introduction of the characters' back-story the author increases both the internal complexity of the components and the external complexity of the [CSS]. This increase in information, which can come in the form of additional [SW] parameterization, results in an additional effort since the [CSS] also has to be optimised. By discarding unnecessary information, the components' internal complexity is reduced alongside the external complexity of the [CSS]. So the author has to find ways to enhance the components internally that will allow them to contribute externally. The internal structure and complexity of the components has to simplified without their informational enhancement to be reduced, 'increasing in the same time the external complexity of the system in terms of depth, and quality, of information' (Jost, 2004, p. 70). The components will never become completely autonomous and their functional roles can be seen as relatively simple compared to the screenplay's collective behaviour, nevertheless, 'complex enough in their own scales' (Mitchell, 2006, pp. 1195 -1196). In other words, the

author's task is to manage and organise as much information as possible in order to produce the desired story with as simple a [CSS] model as possible.

### 3.5.3  Flexibility vs. Rigidity

The bidirectional flow of information can classify a [CSS] as a system that is dependent on the constant exchange of information, thus open to adjustment and adaptation.  However, the screenplay must not extrude plasticity to change, and thus, be at the mercy of its story-world configuration, neither to portray rigidity to change.   As Cilliers comments:

> "Complex systems... must be able to adapt to changes in the environment, and therefore their internal structure must be influenced in some way by external conditions.  Which are the possible coping mechanisms open to a system faced with changing external conditions?  Two extreme positions can be identified.  At one extreme, the structure of the system is fully defined *a priori*... Apart from the loss in adaptivity, such systems may become too cumbersome in complex situations... At the other extreme we may have systems with no independent internal structure at all, but where the structure is fully determined by the conditions in the environment.  A system which merely mimics the environment directly will not be capable of acting in that environment since it will be fully at its mercy."
> (Cilliers, 1998, p. 99)

Thus, an effective [CSS] model needs to have a flexible enough structure in order to allow different states to emerge.  A [CSS] that has a

rigid structure rarely allows additional information to be infused in it, severing the chances for its enhancement.  Authors must ensure that the system has the necessary minimum structure in order to avoid almost chaotic states from taking over.  The minimum necessary structure will allow new ideas, possibilities and potentialities in terms of story alternatives to emerge and flourish, increasing the model's diversity and homogeneity.  Art, literature and films, allow us to travel to worlds that have never been, would never be, or merely exist within the confines of a computer simulation.  Thus, the story assumptions during the configuration of the story-world's components and spatio-temporal structure must be precise yet remain flexible, without jeopardising the internal logic of the [CSS].  On the other hand, fragility does not guarantee sound internal logic, and the more fragile a screenplay tends to be on its high level interpretation, the more fragile its internal logic will be in the low levels, and vice versa.  Authors must find the right balance between flexibility and rigidity, a fact that implies that flexibility points towards increased optimization, while rigidity points to 'informational death.'

The first contribution from adopting complexity theory to narrative is the increased understanding of the *interconnectedness* and *interrelation* of the dramatic components of a screenplay, and how its context produces the emergent phenomenon we call *story*.  As Larsen-Freeman and Cameron explicate:

"We cannot properly understand a system and how it behaves without understanding how the different parts of the system interact with each other; it is not enough to understand the parts just in themselves. Furthermore, once we start thinking of how a system as a whole can only be understood by knowing about the interactions of its components, different aspects of a situation stand out as being important and in need of our attention." (Larsen-Freeman and Cameron, 2008, p. 39)

The second contribution comes in the form of an in-depth academic analysis of all story dynamics. But before attempting to model a Complex Screenplay System [CSS] effectively, a qualitative analysis of its components must be taken into consideration. First, all the different dramatic components in a screenplay must be identified. Then for each component the level on which it operates must be determined. Third, the relations between and among the components have to described. And finally, the dynamics of the screenplay must be explained: i) how the components change over time, and ii) how the relations among the components change over time (Larsen-Freeman and Cameron, 2008, p. 41). In the next chapter such dynamics will be investigated in more depth.

# Chapter Four

**Underlying Mechanics, interrelating dynamics,
and the plot-algorithmic process**

## 4.1    Inner logic and determinism of Complex Screenplay Systems

The interest of this research is to investigate and analyze the empirical principles of narrative that have evolved over one hundred and thirty-six years of filmmaking since Eadweard Muybridge's groundbreaking *The Horse in Motion* in 1878.   The main arguments that explain the syntactic relations of components and the principles that allow narrative meanings to be created and communicated will be presented in this chapter.

The constant interchange between the screenplay system and its author leads screenplays to be affected by their authors and the authors to be affected by their screenplays.   Elaborating on this, Djikic *et. al* explain that:

> "This research confirmed the hypothesis that art can cause significant changes in self-reported experience of traits under laboratory conditions... While studying differential personality traits of fiction and non-fiction readers, Mar, Oatley, Hirsh, dela Paz & Peterson, found that exposure to fiction, unlike exposure to non-fiction, predicts a more positive performance on a variety of social ability measures. If fiction can produce fluctuations in one's own traits, through simulation, identification, or self-implication, it seems reasonable to assume that this process can actually lead to a gradual change of oneself toward a better understanding of others as well." (Djikic *et. al*, 2009, pp. 11-12)

This interaction between the screenplay's properties, values and the story-world's configuration, create a plethora of story alternatives

allowing subsequent story events to be formulated. Analysing a screenplay retrospectively, the end-story events 'pose as if they necessarily had to happen' (Simons, 2008, p. 121). However, if the same story could be 're-winded' and re-written all over again, without abiding to the original text, and possibly with a different author onboard, different story alternatives would become available at the important bifurcating story turning points. These newly-formed alternatives can diverge the story from its original pathway and dimensions.

These alternative story dimensions are made available not only because of what a character can do in a specific action-situation but also what the [SW] allows to happen based on its initial configuration. From this [SW] parameterization a story determinism emerges and a historical path is created that dictates, but does not predicts, what the characters can possibly do in the future states of the screenplay. This determinism is depended on the: 'characters' past reactions always within the story's temporal boundaries' (Rescher, 1996, p. 128). However, such a story determinism is only evident when the screenplay is approached retrospectively, having as a starting point of investigation the end-story events. Before an author commences to the development and creation of a [SW], the options available seem to be unlimited but as the story progresses, things become more probable than possible. Based on logical decisions made by the

author at each bifurcation path, the width of story possibilities narrows down as the story progresses, limiting all possible narrative options to the point that there are only a few alternatives to choose from by the end of the story.  The plot follows a 'process of declining or narrowing possibility' (Chatman, 1980, p. 46), as the choices available to the author become more and more limited, 'till the end that choices are not limited but have become almost inevitable' (Chatman, 1980, p. 46).  In other words, the logical options at each bifurcation point become available not because of who the characters are, as the carriers of action, but because of the unpredictability the story derives from the free will of the author.  As Chatman  states:

> "... in the beginning everything is possible; in the middle things become more probable; in the ending everything is necessary." (Chatman, 1980, p. 46)

A lot of the details of the story-world must be left out either because 'they are irrelevant, unnecessary or unknown' (Lorand, 2001, p. 436), thus, the determinism in stories is neither strict nor valid.  However, as Perkins explains, fictional worlds are more than a tight metaphor:

> "The world of *Citizen Kane* is constituted as a world partly because, within it, there are facts known to all, to many, to few and to none.  The phenomena of a world are independent of perception, though in principle and most of the time available to it.  To be in a world is to know the partiality of knowledge and the boundedness of vision - to be aware that there is always a biggest picture.  To observe a world humanly is to do so from a viewpoint, with angles of vision and points of focus whose selectivity is inflected by the seeing mind.  The

> looking is governed by purposes and expectations, by interests, appetites, hopes and fears...  Welles had freedom to choose how and when to reveal Rosebud because there is always more beyond the frame than any image can contain; more in space and more in time... Yet film studies has in the main ignored the fictional world, at best taken it for granted.  Lack of attention to the fictional world - what makes it a world rather than what makes it fictional - may be one product of the field's recoil from all that smells of realism." (Perkins, 2005, pp. 20-22)

Since chance and randomness are ever present properties and the story evolves over a period of time, rather than structured in immense detail well in advance, the course of events cannot be 'uniquely foretold' or 'foreseen' (Rescher, 1996, p. 131).  So in the beginning, any story appears to be indeterministic, since the options available are enormous or even infinite, and the same applies to the story's possible states.  This holds true for genre films as well since their [SW] set-up differs significantly from one another even though there are similarities on how their stories progress.  As the story progresses though, and the author proceeds to certain decisions that limit the possible states of the screenplay, the options become limited, narrowing down to ever decreasing finite numbers, pointing over time to a more deterministic outcome that is in direct accordance with the screenplay's historical path.  Thus, the output of the screenplay 'follows the history of the system, determined by its mechanisms, but cannot be predicted in advance' (Cilliers, 1998, p. 110).  Although authors have a clear idea in advance of where their stories are heading, it is almost impossible to

predict with accuracy what will happen in certain parts of the screenplay well in advance. Story alternatives will emerge that will need to be given special consideration before while other alternatives that were implemented from the get-go may have to be removed. A historical path diagram, based on the character's decisions and actions in given stages, can look like this:
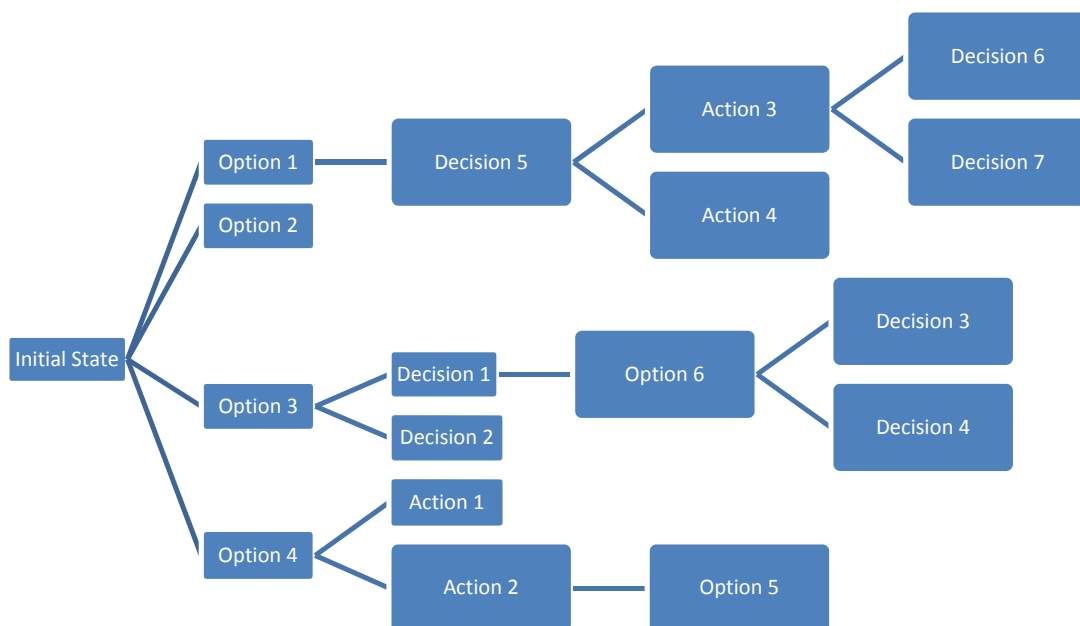
Figure [4.1] - Bifurcation along the historical path in a deterministic story

The tool at the author's disposal that aids the navigation along the historical path and the effective plotting of the story is called *'mapping';* either through the use of *attractors* or plot points, as I argued in chapter three, or through the assignment of parameters to the story-world components, as I will explain later in this chapter. The *attractors*, apart from their obvious utility in structuring a screenplay,

are also used in retaining relevant information, thus, 'adding a sense of memory to the screenplay system, by linking together similar information' (Marion, 1999, p. 74).   Multiple attractors are used throughout a story with interrelated foci, each of which belongs to a different part of a screenplay, and performs a different function. Combined together, the attractors function under a common and broader theme, adding goal-oriented direction to a [CSS].

The assignment of parameters to story-world components creates differentiated units, which are regarded as the building blocks of the [CSS].   The components can be manipulated time and again 'into almost infinite combinations, allowing unique story situations to evolve' (Marrion, 1999, p. 94).  For a [CSS] to be fully explored and materialized, the story boundaries, either spatial, temporal, conceptual or semantic, have to be properly defined, since 'boundaries and limits are preconditions for structure' (Cilliers, 1998, p. 95).  The story boundaries are properties of the story-world, to which I turn my attention next.

## 4.2    The story-world [SW] in [CSS]

I have chosen to refer to this concept as the story-world [SW] rather than a *possible world* or *fictional world* because '*possible worlds* are consistent' (Lorand, 2001, p. 436) and are mapped in detail in their entirety, whether a detailed report of all the facts in a [SW] is

impossible, as Perkins asserts below.  A [SW] shares a lot of details, facts and events with reality but its boundaries are clearly defined by its initial configuration.  The objective here is not to simulate reality but fictionalise it, thus boundaries and parameters that define what is allowed and what is not are used.  There will always be details that are left out of a story for a number of reasons, thus, I find the term [SW] more succinct in describing the complexities of a screenplay system.

As Perkins argues:

> "The world is everything (in space and in time) surrounding and embedding our immediate perceptions.  There is always an out-of-sight just as there is always an off-screen.  Out of sight cannot be entirely out of mind: we may not know what lies beyond the horizon but we do know that there is a beyond." (Perkins, 2005, p. 22)

Mar and Oatley add to the above argument that:

> "Abstraction also means compression, greater portability, and ease of communication... Fictional literature abstracts, summarizes, and compresses complex human relations by selecting only the most relevant elements.  This abstracted level of comprehension also enables one to see how these principles apply elsewhere and how they may be generalized." (Mar and Oatley, 2008, p. 177)

The concept of story-world [SW] refers to 'the state of affairs that are deemed possible' (Ronen, 1993, p. 30) in a fictional world that serves as the initial playground for the creation of a story, and it is usually 'constituted by agents, and their relevant properties, circumstances, story events, and surroundings' (Bordwell, 2008, p. 90).  In a [SW] we are

not dealing with 'what has happened' but rather with '*what would happen*', either in accordance with probability or necessity (Aristotle, 1996, p. xiv) within its pre-assigned parameters.  Or simply put, story-worlds are 'hypothetical and counterfactual' (Elam, 1980, p. 102) dramatic models and states of affairs of 'who did what to and with whom, when, where, why and in what fashion' (Herman, 2002, p. 5).  As van Dijk explains:

> "First of all, artificial narratives need not respect a number of pragmatic conditions.  Well known is the fact that such narratives need not be true, although they may be true (or true for the narrator or audience of a given culture), that their truth condition is optional by reporting about fictitious agents, events, actions, or circumstances...  Thus, although artificial narratives may be false in the actual world (history), they may be true in an alternative, but compatible, world...  In all these cases the 'narrative worlds' must be similar to a certain degree to our own world, in order for the narrative to have a pragmatic function...  Nevertheless, we may say that in general the major pragmatic function of artificial narrative is emotional." (van Dijk, 1975, pp. 291-292)

Thus, [SW] are treated as real by the audience due to the implementation of an efficient 'suspension of disbelief.'  The 'suspension of disbelief' occurs when the audience presumes that the laws of a [SW] allow all the events presented in the story, and it is usually achieved by leaving unnecessary details out and minimizing distractions.  This process allows authors to focus on asking the right story-questions, choose the right story parameters and fill in the logical gaps that could expose a story as not plausible, incoherent,

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inconsistent, or simply illogical.  The plausibility of a [SW] will be ultimately judged by the audience, since it is people who judge the realism in a given story 'based on their cognitive preconditions' (Branigan, 1992, p. 29), even though some of the 'missing details' will not be present.  As Lorand points out:

> "... the inclusion of everything (if at all possible) creates a chaotic assemblage of items, which do not coalesce to a meaningful report." (Lorand (2001, p. 432)

Some films recover from the breakage of rules but some others do not and the 'suspension of disbelief' could have an adverse effect on the audience's patience.   For example, in *Angels and Demons* Camerlengo's plan needed Langdon in order to be fulfilled as he knew that Langdon would solve the mystery and find the antimatter's position before the explosion.   However, Camerlengo attempts to assassinate Langdon by cutting off the oxygen supply in the Vatican Library.   This is an apparent plot hole in the story as Camerlengo's motivation is not justified by his actions, yet the motion picture survived even with this logical mistake.   Another example of a successful film, which has also been voted as the best motion picture of all times, yet employs one of the most glaring plot-holes in the history of cinema, is *Citizen Kane* directed by Orson Welles.   Just before Foster Kane dies he says the word 'Rosebud' but there is no one in the room to hear him. The maid enters the room only after his death yet the reporters set out to discover the secret meaning of the word.   Although this mistake

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could have easily been corrected, this does not change the fact that the film's premise is flawed as it stands.

The initial responsibility for the configuration of the [SW] lies with the author, who enriches it with 'characters and their relationships, their motives, decisions and actions or reactions' (Bordwell, 2008, p. 98), arranging the information in such a way that is distinctive and unique. Assuming the role of the observer, the author creates a fictional 'reality' with fixed properties that serve as the input and preconditions of the [SW], ultimately influencing its outcome. No matter how many details go into the construction of the initial [SW], there will always be gaps in the exposition that could not be filled due to the lack of information or time on screen, or need not be filled in 'due to the irrelevance of the information' (Lorand, 2001, p. 431).

Plotting the story, authors create possible combinations of story parameters, with the aim to maximise conflict, 'creating in a way a diagram that charts the possible trajectories the characters can follow through the story's *state space*' (Simmons, 2008, p. 119). This chart of the characters' relations and interconnections poses as the pool of story possibilities in a story-world [SW]. The construction of a [SW] presupposes that the author will stipulate what story-laws and what 'constitutive properties of the characters, places and events will come in effect' (Jacquette, 1989, p. 168) and when they will come in effect.

In other words, the *state space* represents the unification of the landscape of possible affairs and all the possibilities, assumptions and definitions, in a logico-spatial and logico-temporal arrangement that form the story in a screenplay. The totality of the events of the *state space* constitutes the [SW], and 'any event complying to the story-laws is possible and can occur' (Wittgenstein, 1996, p. 43).

Any violation of the story-laws or reversion of the cause-and-effect principles will alienate or confuse the audiences of a mainstream motion picture, since they assume, based on the initial configuration of the story-laws, that the [SW] is 'consistent with its story parameters' (Elam, 1980, p. 104), and that all the events conform with them. As philosopher Dale Jacquette (1989, p. 169) puts it:

> "There are practical constraints on how far an author can violate conventional expectations about the properties of certain kinds of fictional characters, and a certain inevitability in art may prune away aesthetically unacceptable outcomes of events and developments of plot once a story is begun and the dramatis personae established."
> (Jacquette, 1989, p. 169)

I will refer to this concept of non-violation of story-laws as the *non-violation principle*. In order for the *non-violation principle* not to occur, all the propositions, assumptions, definitions and parameters related to the [SW] configuration must be 'intrinsically connected with the *state space*' (Wittgenstein, 1996, p. 69).

Stemming from the above, it seems that [SW] have a dynamic nature that is rooted in the behaviour and actions of the individual characters. As Meister asserts:

> "...the entire complex of interconnected behaviour and events which contribute to the dynamic nature of the narrated world." (Meister, 2003, p. 45)

A [SW] then does not differ from an *event schema*, since it is a hierarchically organized unit of relevant information that describes what is probable, what is allowed to happen, and when an event will happen in any given story-situation.  As Mandler points out, an *event schema* is:

> "...a hierarchically organised set of units describing generalized knowledge about an event sequence. It includes knowledge about what will happen in a given situation and often the order in which the individual events will take place.  It is organised like a categorical structure in that the knowledge is arranged in a hierarchy with more general classes of events containing more specific events nested within them...  Thus, in an event schema there are serial connections among the items in a given unit as well as  link between each item and the larger unit of which it is a part." (Mandler, 1984, p. 14)

In other words, a [SW] schema is an organized and hierarchized mental structure that is consisted of a plethora of assumptions, parameters and principles about the way a story should proceed.

### 4.2.1 Boundaries of a [SW]

For a [SW] to be properly defined its fictional boundaries have to be defined first. By boundaries I am referring to the logico-temporal and logico-spatial dimensions of the [SW] within which certain events can occur in time and in space always in accordance with the initial story-laws and principles. A simple example of the above is when the author has not established any of his characters with the ability to fly in a given [SW] but during the course of a story a character opens the window and flies out as if he were Superman, violating this way the story-laws and assumptions governing the [SW]. In that case, the *non-violation principle* is violated and the 'suspension of disbelief' collapses as the story ceases to be coherent, consistent, and subsequently believable. Thus, in order for that specific character to have the ability to fly, the author must include a parameter for this trait in his initial assumptions while setting up the [SW]. Then the character must be established having the ability to fly, allowing the audience to create the necessary benchmarks. Sometimes the suspension of disbelief can be deliberately broken by providing enough foreshadowing: heavily hinting at a possible outcome in the story. An example of this can be found in the *The Matrix* when Neo leaves the matrix for the first time and is taught by Morpheous how the matrix works: no one can break the rules of the matrix but Morpheous believes that Neo can as he is the *one*.

The temporal dimensions in a [SW] can be identified in three levels that are not always encountered in stories but their occurrence greatly varies. The first level denotes the *chronological time,* the actual chronology in which the story takes place, either historical, contemporary or futuristic, and may or may not be made clear to the audience, intentionally or not. The second level refers to *fictional present* in which the characters act and react, creating this way new events. The change of events in the *fictional present* are presented strategically along the *state space* that does not necessarily pertain to the logical or temporal order they occurred, denoting this succession of events as *plot time*, maximizing this way the dramatic effect of a story, whether this is 'rising tension, suspense, or comedic effect' (Elam, 1980, pp. 117 - 118). *Plot time* is the structural alignment of events across the [SW]'s *state space*, linked together on the surface structure of a screenplay as a succession of characters' actions, presented either in a simple story beat or multiple scenes that are stringed together to form a scene sequence. It is this asymmetry, structural or not, that adds a 'dynamic texture to the overall temporal dimension of the narrative' (Tsoukas and Hatch, 2001, p. 1007).

The presence of one or more temporal levels in a [SW] requires a more complex framework to be in place in order to facilitate their structural alignment onto the surface structure. Authors have to establish all the

temporal levels in the beginning of the screenplay and mediate between them without logical gaps appearing in comprehension.  In addition, the spatial dimensions also have to be clearly defined, in terms of actual locations, since the occurrence of events in the *fictional present*, even if that is positioned chronologically in the past or the future, always unfold along the three spatial dimensions and the current temporal one, as they exist under the constraints of the [SW]'s laws, assumptions and configuration.

An event will structurally unfold onto the surface structure both vertically, denoting the temporal dimension, and horizontally, denoting the spatial dimension.  The sum, albeit abstract, of the two dimensions marks the story's *threshold of permissible actions,* all those actions that follow the story's inner logic.  Anything belonging beyond the upper boundaries or falling under the lower boundaries of the [SW] activate the *non-violation principle* and suspend the audience's disbelief.  Such story-options create logical inconsistencies and must be re-thought and corrected in order for the story to maintain its coherence.  For a character that belongs to a [SW] where the audience's suspension of disbelief must be willing without extensive prior explanations, i.e. in a fantasy world, the character must have special or magical abilities that dictate how the character reacts throughout the story, the character must be introduced and defined as such in Act I along with the conditions that allow such actions within the [SW]'s boundaries, thus

'having a truth-value' (Wittgenstein, 1996, p. 73).   Alternatively, the character's actions must be logically justified in other parts of the screenplay, providing a logical explanation to the audience that will maintain its 'suspension of disbelief.'

Although screenwriters sometimes set up expectations in their stories and the minds of the audience only to overturn them in the process, unaddressed issues, more often than not, affect the consistency of the plot-line, or in milder interpretations, leave the audience wondering. For example, in in *Jurassic Park* directed by Steven Spielberg, the creator of the park says that his park will not only be for the rich but for everyone instead.  Yet the park is located on an isolated island where access to it can only happen with boats and helicopters.

For details that turn out to be of no great importance, i.e. the trait of a secondary character that if removed does not affect the unfolding of events, and are only used to add dimensionality to the characterisation, for example a character likes whistling, even though he does so out of tune, no previous introduction or justification is needed.  However, if the character's whistling is intrinsically connected with the plot, for example, the antagonist was a murderer and his whistling could be identified by a witness, then the whistling is an important character trait and must be established well in advance.

Otherwise, such an option may come across as a *Deus ex machina* that diminishes the strength and effectiveness of the overall plot.

The summation of all the story-assumptions that create the [SW], both for its external properties that refer to the setting of the story-world itself, and the internal properties that refer to the agents and their attributes, provide a logical scaffolding under which the [SW] operates, providing the necessary inner logic footpath that allows the story to progress with a goal-orientation.  From these initial [SW] assumptions and principles, and abiding to the story's inner logic, authors can make decisions as to what the characters will do next or how the story will progress, even though certain aspects may be revised, re-written, or removed in subsequent drafts.  Since these logical assumptions, character traits and parameters, communicate the story to an audience, thus, communicate the state of affairs of the [SW], they must be intrinsically connected with the plot, and weaved into the story by means of deep structure.  This allows the forming of a 'logical, consistent and unified landscape' of story possibilities (Wittgenstein, 1996, p. 69), or of 'universalized plot' (Aristotle, 1996, p. lxiii), events connected to each other in accordance with necessity and probability.

Necessary events with truth value move the story forward without burdening the audience with unnecessary details.  As I have argued before, authors choose what story parameters to utilize, details that

could be infinite if one works hard enough as to imagine them, presenting what is needed between incidents in order to maintain 'a sense of continuum' (Chatman, 1980, p. 30). For example, in a scene the hero wakes up and starts getting dressed while in the next one he enters his office, groomed and spruced up. In such a scenario, the audience can infer that between these two scenes numerous unimportant events took place: the character got shaved, had breakfast, caught the train/taxi or drove himself to work. Since these details do not affect any of the story-lines, for reasons of brevity the author may choose not to present them. Additionally, the audience fills in the gaps by itself since specific elements need not to be drawn or suggested as they are often assumed to be known in advance; often the case with cultural or historical elements, or details of current affairs that pertain to the real world.

However, if such events serve a purpose, affect the plot, reveal important character traits, or communicate what the theme or subtext is, they must be presented so the audience can create the necessary mental benchmarks. Otherwise, logical gaps will spawn and the coherence of the story will be jeopardized or collapse. The same holds true for characters, objects and settings that play an important function in the plot. If an important element is removed from the forward continuum of the unfolding of the events, i.e. an important secondary character stops appearing abruptly, a justification must be

given, otherwise the audience might start questioning the logical coherence of the story.

### 4.2.2 The function of plot in a [SW]

The plot and story are distinguished from each other quite distinctly, with story being the narrated events put in a logical order, the 'what' (Chatman, 1980, p. 19), and plot being the strategical arrangement and organization of these events along the [SW]'s *state space*, the 'how' (Chatman, 1980, p. 19). Bordwell and Thompson use the term plot in order to 'describe everything visible and audibly present in the film before us' (Bordwell and Thompson, 2003, p. 70), whereas they define the story as 'the set of all the events in a narrative, both the ones explicitly presented and those the viewer infers' (Bordwell and Thompson, 2003, p. 70). Story refers to the events of a [SW] seen under temporal, spatial and causal relations, and could be regarded as 'a mental construct' (Bordwell *et al.*, 1988, p. 12), whether plot is the way this mental construct is presented to the audience. Put differently by William Miller:

> "...story is the structure underlying the action, while the plot is the way that the story works itself out through actions and events. The same 'story' might be plotted any number of different ways." (Miller, 1998, p.53)

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Temporal succession, which implies forward movement and momentum, and the principle of causality, which implies motive related to human endeavour for the achievement of goals, are the two essential combinatorial forces of story.  As I will explain later, the structuring of the dramatic components over the three levels of deep, intermediate and surface structure, allow them to be plotted efficiently along the *state space*.  Following this multifaceted structuring of story components, the author, using the plot-algorithm which allows bifurcation and forking path alternatives to story possibilities, causes the story to emerge via the components' interaction.  With the use of tree diagrams and forking paths schemas, which visually explain the behaviour of [CCS], the deep inner dynamics and logic of the screenplay will emerge onto the surface.

As I argued in chapter three, at each cardinal node each character has a choice to make, and based on her initial parameterization and the [SW] configuration, new sets of story directions become available.  Once a story-related choice is made, a forking-path is created along the [SW]'s *state space*, as shown in figure [4.2], while the sense of continuum is maintained deterministically.  As Simons explains:

> "Forking-path narratives represent in an admittedly modest and very partial way a part of the state space that opens up for the characters at a certain bifurcation point." (Simons, 2008, p. 120)
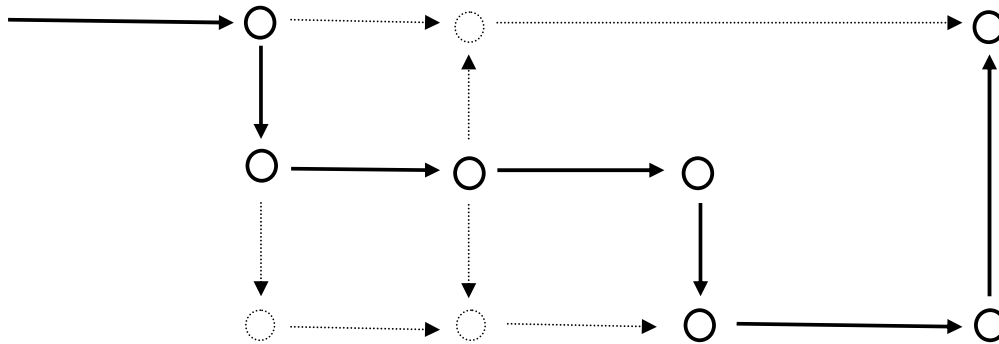
Figure [4.2] - Forking-path possibilities along the state space in a hypothetical [SW]

The thick lines and circles in figure [4.2] represent the story possibilities at each structural node where an option was presented to the character and a choice was made by the author. The dashed lines and circles represent options and directions that were not preferred but could have been if the plot were different or the solution to a logical problem was better. The dashed circles also denote options that were not possible based on the original [SW] configuration. It is evident that a character could be led to the same cardinal node in a variety of ways. However, the ones presented in the screenplay are the ones the author preferred over others for a variety of reasons. At each bifurcation point, the audience creates a mental benchmark based either on information received from each of the cardinal nodes or on information that is already known to them which in turn creates additional benchmarks as the story progresses. As Thorndyke argues:

> "When the narrative structure was readily inferable
> due to repetition and redundancy in the text,
> subjects could easily produce an organizational

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hierarchy for the plot and use it to encode the information from the passage. Such stories were rated easy to comprehend and produced high recall. A more densely structured plot with no repetition produced lower comprehensibility ratings and recall proportions, indicating that subjects encountered more difficulty producing the integrating framework for the passage. (Thorndyke, 1977, p. 104)

However, by replacing a recognizable three-act structure in a screenplay with a novel one the audience will have difficulty in creating benchmarks and following the story. As Thorndyke explains:

"As the amount of identifiable structure in the passages decreased, there was a corresponding decrease in comprehensibility and recall... The influence of passage structure on memory was further highlighted by the proactive facilitation effects obtained by repeating the same structure with different characters in successive passages. At the same time, however, story recall was interfered with when it was presented prior to a story with a different structure but the same characters." (Thorndyke, 1977, p. 104)

The above explicitly points to a universality of the three-act structure regardless of the narrative medium, and Mandler elaborates on this:

"...stories have an underlying, or base, structure that remains relatively invariant in spite of gross differences in content from story to story. This structure consists of a number of ordered constituents. Traditional stories begin with a setting, which introduces a protagonist and other characters, and often includes statements about the time and locale of the story. The setting is followed by one or more episodes that form the overall plot structure of the story. No matter how many episodes, however, each one has a similar underlying structure..." (Mandler, 1984, p. 22)

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A historical path is created retrospectively along the *state space* which adheres to principles of cause and effect. Between each structural node lie beats of action that add to the forward progression of the story and carry the action from the previous stage to the next one. Even though the progression from a structural node to the next one is linear and of deterministic nature, and so it could be traced all the way back to the beginning, the effects of the logical decisions are non-linear. A decision that does not abide with the story-laws could have adverse effects as to how the story climaxes and resolves.

Taking the wrong turns in the forking-path possibilities, as figure [4.2] shows, could create a precedent that will bring the hero to a dead end. Such logical dead ends can only be fixed through a thorough revision of the story-laws and the [SW] configuration. By implementing new assumptions in order to solve logic-related problems, inconsistencies and gaps could emerge causing the [CSS] to exit its state of balance. In such a scenario, the configuration of the [SW] needs to be altered in order to accommodate new story possibilities and allow the [CSS] to remain in a state of equilibrium. As Todorov (1990, p. 29) has identified, the progression of story through transformation of dramatic data happens in five stages:

1. A state of equilibrium at any point during the story, whether this would be in the beginning, middle or end.

2. A disruption of this equilibrium based on the actions of the antagonist that follow his/her motive and dramatic need.

3. A recognition on the part of the hero that the antagonist's action have affected him.

4. The hero decides to act and bring his situation back to a state of equilibrium.

5. The reinstatement of the equilibrium and the progression of the story to the next cardinal node where a decision has to be made or another action will be taken by the hero as reaction to the antagonist's agenda.

This transformation implies that there are *existents*, characters who bear an action or take a decision, and *events* that 'stipulate a change or process' (Branigan, 1992, p. 5), or create a need for action based on causality and psychological motive. After all, 'causes and effect fit together when they are part of an individual's plans and goals' (Branigan, 1992, p. 29). This interconnection of desires, needs, goals, motives and actions of all the characters points directly to the complex nature of the [CSS], where no detail is inconsistent or less significant to another, and all the dramatic components are tightly interrelated. More often than not, causality in a story emerges from the motive-fuelled actions of its characters in their quest to achieve a goal and satisfy their dramatic need. Causality after all is a form of determinism, thus random actions or events do not constitute causality that is based

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on motive, even though such random events could create causal actions along the story's *state space*. Story causality, thus determinism, is intrinsically connected with a probabilistic behaviour. However, there are examples of films that do not employ characters in pursuit of a goal and their actions are not always dictated by motives or needs in the manner described above. Such films rely on the communication of their theme such as the Stephen Daldry-directed *The Reader,* having as a *theme*: 'how far will you go to protect a secret?'

As I have previously explained, the state of affairs in a [CSS] once the [SW] has been configured and the story has commenced, deals primarily with what is probable and not with what is possible. In other words, the [SW] dictates the possible but the desired end-state, the outcome, dictates the probable. In larger systems, such as nature, causality manifests itself differently from what it does in human affairs. As Alexander Spirkin argues in chapter 2 of his *Dialectical Materialism,* 'causality in human behaviour always emerges in the form of motivation' (Spirkin, 1983). And since stories primarily depict complications revolving around human affairs, the causality encountered in narrative is always fuelled by the motivation of its characters.

In a complex plot the occurrence of events does not affect the basic story-line immediately or directly, but 'non-linearly instead' (Elam, 1980,

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p. 119), like events waiting to happen. The events at each cardinal node combine structurally together, through dramatic beats, scenes and scene sequences in order to create '*micro-sequences* which in turn combine into *macro sequences* which jointly create the story' (Rimmon-Kenan, 1983, p. 16). Embodied within the dramatic events are notions of change, a difference between situations or relationships of dramatic components. Thus a temporal ordering of the [SW]'s *state space* is required. The carrier of the action, thus the bearer of change, is a conscious agent, a character, who intentionally instigates a change based on psychological needs, i.e. motivation, desire, aspiration. The branch of philosophy known as *philosophy of action* has identified six elements of action, which are: a conscious *agent*, his *intention* in acting, the *actual act*, the *manner and means* of action, the *temporal and spatial setting* and the *motive* behind the action (Rescher, 1996; Von Wright, 1996; Elam, 1980, p. 121; Van Dick, 1975). The events that cause a change in the course of the story appear to have a truth value, while basic, casual, unintentional or unconscious actions are excluded, having a false value, since the gravity of their effect onto the story is infinitesimal. The truth value actions can be strung together in blocks of dramatic beats, then into scenes and scene sequences, and progress the story forward, since 'what distinguishes them from mere doings are the intention and purpose of the agents in acting' (Elam, 1980, p. 122). However, the meaning that is sometimes created by elements with truth value is not always

controlled by the screenwriter and is open to the audience's interpretation since dramatic elements acquire significance of their own.

Out of this intentional, purposeful and causal forward movement of the plot, meaningful sequences are created which carry a theme, communicate an idea, expose character traits, and generate more action through reciprocal action and reaction. The emergent holistic result of this interaction and interrelation of the dramatic components, due to the interaction of their functions in the deep structure, and their interpretation onto the surface structure through dramatic events, is what we call *story*. The dramatic components are the fabric of the system which generate events because of their antithetical functioning roles, i.e. conflicting motivational agendas which generate conflict through actions. In other words, the combination of jointed and intrinsically motivated action and the causality that emerges from it and the characters' interaction, is what causes a story to emerge in narrative terms. As I will later argue, the jointed action on the surface structure is a direct consequence of the transformations that occur in the deep and intermediate structure because of the plot-algorithm.

The inner logic of a [SW] plays an important role in the transformation and the creation of differences between the characters; differences which create dramatic conflict, utilizing the passing of time within the

constraints of the story-laws and the set up of the [SW].  Thus, causality can always be found in a [SW] that is driven by the inner motivations of the characters that act in order to overcome obstacles as the mounting pressure of the external conflict imposed by the antagonist has them reacting to his plan.  As Bordwell puts it, 'character-centered, i.e. personal or psychological - causality is the armature of the classical story' (Bordwell *et. al*, 1988, p. 13).  Bordwell's assessment  opposes the standard Aristotelian perception that plot is the armature of the story, therefore coming first in the hierarchy while the characters second.

As I explained in chapter three, characters, events and plot are of equal importance in a [CSS], each serving a different function but having a *quid pro quo* exchange of information.  They are all tied up with the characters' psychological motivations, needs, goals and agendas, all interconnected in a complex way by the strategic arrangement of events underlined by theme.  Tampering with such balance could affect the story in a multitude of ways, since 'each arrangement of dramatic information could be regarded in a sense as a different plot' (Chatman, 1980, p. 43), and the emphasis could be shifted from important dramatic details to unimportant.   Fitting everything under the common roof of a screenplay is not a task that could be easily achieved, however, if the author manages to find the right balance, nothing is unobtainable.

A story is a mapping of all the causal relations between events and characters. As figure [4.3] shows, the events can be further broken down to actions and happenings which can be regarded as new events created by the characters' reactions, while existents is an accumulation of the characters populating the story and spatio-temporal settings.
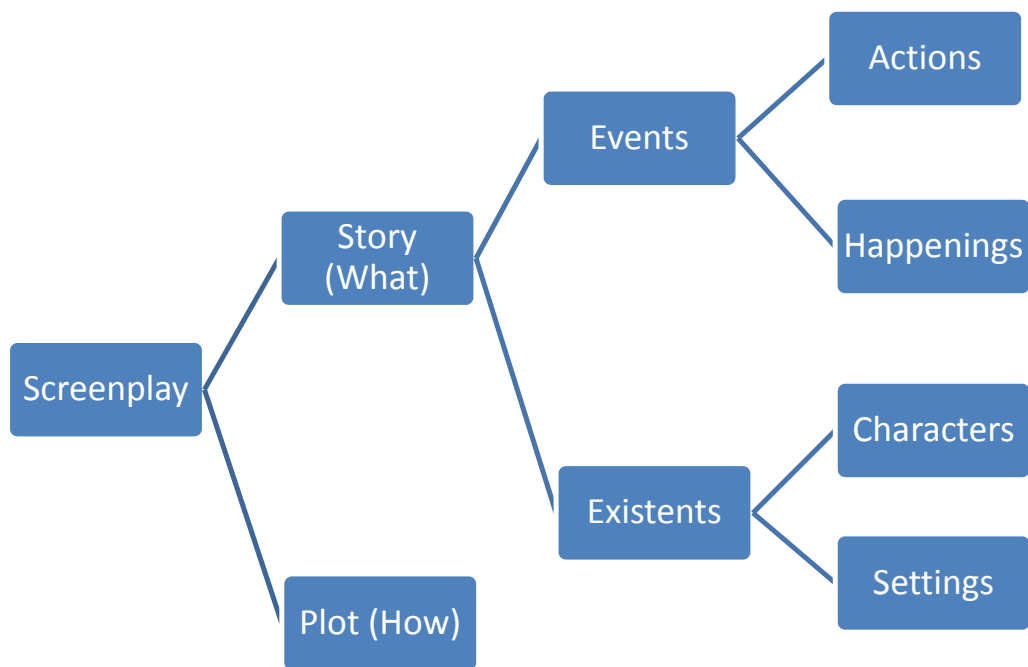


Figure [4.3] - Story and plot (Chatman, 1980, p. 19)

This is in accordance to the Aristotelian viewpoint that a story has to have a beginning, a middle, and an end, in other words, a three-act structure that is 'consisted of purposeful events abiding to a well-designed and deep-layered structure' (Lorand, 2001, p. 425). However, the narration of events has to have an embedded causality that sparks

an action or a reaction from the characters in order to qualify as plot, 'rather to be a mere sequence of unconnected events' (Bordwell *et. al*, 1988, p. 13).

The extended three-act structure paradigm in chapter three serves a certain function to the plot: it is a structural framework on which the relationships of dramatic elements are positioned. Such a mental construct serves as a guide to the author to lead the hero to a certain climax and resolution through the achievement of a goal with forward momentum and direction, maintaining a desired pace that abides to genre conventions, i.e. an action/thriller gets into a mode of having a much faster pace after the midpoint, the second half of the second act, compared to a comedy. Using this structural framework as its basis, the plot algorithm mechanism, the transformational tool that progress the story from one point to another, organizes the change of information 'through sets of relationships between the dramatic components' (Branigan, 1992, p. 4). This change in the state of affairs, which Aristotle called *peripeteiae*, from good to bad and vice versa, is what adds real substance to every story: the dramatic conflict.

Apart from motivated action, another tool that conveys information, or presents interactions between the characters, is dialogue. Dialogue serves a very specific and purposeful function and has a weighted effect on the plot even though it is not always immediate. Although

dialogue is immediately present to the audience, its real essence is generated in the deeper levels of structure. It is not in the immediate goals of the current research to investigate the linguistic capacities and capabilities of the fictional characters but rather to examine the functionality of the dialogue as a plot-servicing tool. Categorized within its functional spectrum, dialogue is used for:

1. the presentation of *background information* about characters and events,

2. the establishment of *intentions*, *wishes*, *beliefs*, *flaws*, *desires*, *conflicts* and *needs* of each character,

3. adding *multidimensionality* through the manifestation of story possibilities,

4. the revelation of *character traits*, *idiosyncrasies*, and *quirks*, and the exposition of *theme*,

5. the elicitation of *emotion* and *impressions* from the audience through declarative sentences or statements,

6. *foreshadowing* and *paying off* for the creation of suspense and anticipation to the audience, and a certain amount of the unexpected or the '*surprise principle*' (Miller, 1998, p. 29) as to battle predictability, and

7. for the explanation of the [SW] and its *properties* to the audience, especially when the [SW] is not a world that is usually encountered in everyday life and goes beyond the ordinary, i.e.

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a fantastic world, and in which the audience has no real or immediate reference for it.

## 4.3   Story-world [SW] configuration and set-up

A [CSS] is constituted of 'small sets of basic units' (Branigan, 1992, p. 12), or dramatic components, which have no meaning in themselves but acquire meaning through their functions and relations to other components.  For example, the hero's goal means nothing by itself, neither can an author create a story based solely on a goal without implementing the necessary internal or external conflict of the main characters.  However, the hero's goal acquires meaning if there is a conflicting and opposite force stemming from the antagonist's goal or agenda that creates story-related causality and justifies the actions of the hero in achieving his psychological need.

Even though later in this chapter I will categorize and analyze the dramatic components and their functions individually, it is not possible to describe a [SW] in its entirety for a variety of reasons.  The aim is to construct a fictional landscape of possibilities within which its spatio-temporal boundaries a story is conveyed to the audience.  It is possible to tell the same story with identical characters and set ups and with an infinitude of perspectives and angles because of the authors' unique individuality.  What details and in what depth will be included as [SW]

parameters rely solely on the author's discretion.  However, for stories to be coherent and consistent certain dramatic elements need to be implemented in order to function efficiently.  Bringsjord and Ferrucci in describing their attempts to create a computer-based story generator explain that whether or not a story generator can be implemented to achieve:

> "...wide variability hinges on what we call architectural differentiation.  A story generation system has architectural differentiation if for each substantive aspect of the story that can vary, there is a corresponding distinct component of the technical architecture that can be parameterized to achieve different results." (Bringsjord and Ferrucci, 1999, p. xxiv)

Bringsjord and Ferrucci (1999) use the term *wide variability* to describe all those essential story components and dimensions that need to be configured or parameterized if a [CSS] is to be created.  Such elements include plot, characters, settings, themes, imagery, etc., and the process of defining them does not differ from what I have been referring to as [SW] configuration.   As Bringsjord and Ferrucci note 'one of the chief effect of it all is to conjure unforgettable images in the reader's mind' (Bringsjord and Ferrucci, 1999, p. xxiv).  But Bringsjord and Ferrucci also make an insightful observation about genre films that coincides with the conclusions I drew in chapter three regarding the need to infuse more heterogeneity to the characters:

> "At the other end of the spectrum fall formulaic fiction and film; here the variability is narrow.  Some romance novels, for example, fail to offer wide

> variability of plot and characterization: it's the same character types time and again, dancing hot and heavy to the same choreography." (Bringsjord and Ferrucci, 1999, xxiv)

Following from my arguments in [4.2], the configuration of the initial story-related assumptions, including any story-laws and principles, represent the structural scaffolding of the [SW]. Based on this configuration, further complications and events implicating the characters will be deduced in a process that must adhere to the historical path of the story. The author's starting point is to decide what kind of story will be told and under which perspective, taking into consideration the needs and climate of the market, the budget, similar films recently released, her biased preference and abilities as a storyteller etc. Having decided on the issue, the author starts modelling the [SW] leaving out all the details that are not directly linked to the story. For example, an economical approach can be taken towards secondary characters and subplots, keeping only those that are needed for the story to be communicated effectively. Thus, characters who do not serve a specific function could be omitted.

However, the author might have to invent additional characters as the story progresses in order to solve a logical problem that will have arisen in the latter parts of the screenplay. For example, in the end of the second act, a logical problem involves the hero being hogtied in a prison cell. This is how the story has progressed based on decisions at

previous forking-paths.  But for the story to advance into the third act, the hero must be free in order to punish those who killed his family, and who are, at this point in the story, still free.  The probability of the hero escaping at this stage just by himself and without external help is almost nil if the 'suspension of disbelief' is to be maintained.  In this case, a secondary character must help the hero escape and who, in addition, must be sympathetic to the hero's quest.  However, such a fictional character has to be introduced earlier in the screenplay.

For example, I will discuss here *The Shawshank Redemption*, written for the screen and directed by Frank Darabont based on Stephen King's novel.  In the film, Andrew Dufresne's attempts to escape the prison would never have been successful if it weren't for Red Redding's help, the prison's 'fixer' who runs contraband.  Early on in the story, Red Redding bets against Andrew as the first one who will break down from the fresh batch of inmates, losing a substantial amount of money along the way.  Later in the story, Andrew approaches Redding and asks him for a rock hammer.  Redding likes Andrew from the start and assumes that Andrew will use the hammer in order to engineer his escape, however, Redding quickly changes his mind when he sees how small the hammer is.  As time passes, and following his repeated raping by a gang of inmates called 'Sisters', Andrew, after watching a film, asks Redding to find him a poster of 'Rita Hayworth.'  That poster will eventually cover the tunnel Andrew has been digging for years, which

he used to escape the prison and flee to Mexico, only to be reunited years later by his friend Red Redding.  It is evident that without Redding's help Andrew could not have managed to escape prison; if there were not a Red Redding in the story Stephen King must have invented one in order to make it work.

Thus, the author assigns a truth value to the secondary character, since the presence of such character affects the basic story-line and plot, and chooses to introduce him or her well in advance.  This way, a logical problem that has arisen due to the adherence to the story's historical path along the *state space* is solved.  If the author chooses to assign a false value to the secondary character and present him to be unsympathetic to the hero's quest, the set up might not be believable and the plot's inner logic will be violated along with the audience's 'suspension of disbelief.'  Alternatively, if the author chooses to persist in pulling aces from her sleeves and still assign a false value to this secondary character by suddenly presenting him without having introduced him earlier, then she will have solved a plot-problem having utilised an easy and unjustified solution.   Such a solution will come across as being contrived solely for the purposes of correcting this particular logical gap.  However, when a few of such easy solutions happen in a film the audience's 'suspension of disbelief' will start collapsing, and the ramifications on the story's coherence will not be ameliorated easily after this.

Having its initial conditions laid out, the story-laws and principles, possibilities, assumptions and 'what-if' hypotheses, the dramatic scenarios for the characters can be implemented into the [SW] where everything will be linked together by criss-crossing motives, conflicts, needs, desires and goals. This combinatorial effort facilitates the discovery of new angles and story possibilities, the insertion of new alternatives, and eventually the fine-tuning of the envisioned story. Characters' traits, parameters and story-world thresholds might have to be revised and redefined in order to blend together effectively. Thus, a [CSS] with increased stability is created where the differences between the dramatic components cancel each other or average out. Even though when small details and characteristics are altered, especially in the intermediate and surface structure where the changes are not of fundamental nature, the [CSS] will maintain a level of consistency throughout. However, if the changes affect components and parameters situated in the deep structure then this will have a non-linear 'domino' or 'ripple effect' on the intermediate and surface structures.

As I will explain later in the chapter, the dramatic components are categorized in three distinct structures: deep, intermediate and surface structure. It will also become clear why the main characters and their psychological motives, needs and goals always populate the deep structure. If any of these parameters is altered after the screenplay has

been written, or new concepts are introduced, the effect on the story will be substantial.  For example, the hero's goal changes because the antagonist's agenda is altered.  This will have an impact on the set up of the screenplay which will in turn affect the historical path and eventually how the story progresses.  New locations, characters and story hypotheses will have to be introduced.  However, if the incorporated changes are relative to the parameters populating the intermediate or surface structure, i.e. secondary characters are introduced, the impact on how the plot unfolds and the story progresses will be milder.  For example, certain back-story details need to be communicated to the audience in a specific scene and the introduction of a minor character would facilitate this exposition without the main plot to be affected.  Two primary characters are conversing in the living room of a manor house at the dawn of the 18th century.  Deeming necessary to convey some back-story historical details to the audience, the author chooses to introduce a maid who at that moment enters the living room and informs her master, and through the dialogue exposition the audience, all the necessary back-story details.  The maid may not appear again in the course of the story, and although the lack of her appearance will not affect the main plot, the story-line will have been dimensionalized effectively through back-story exposition.

As I argued throughout chapter three, it is not possible to understand how the [CSS] functions holistically by thoroughly investigating the behaviour of each individual component. However, a better insight can be achieved if we understand how all the elements, and the story-rules and principles underlying their function, blend together under the common roof of the [CSS]. Rooted in the deep structure is a system of story-rules and principles that form the basis for the generation of story-assumptions and propositions with a structural function. Such rules and principles are considered as the elementary properties of storytelling, i.e. there could not be a narrative that does not incorporate conflict between characters in at least one of the following levels: personal, intrapersonal or extra-personal.

The description of the elementary components and their function is 'the first step in the analysis of the total structure of a play' (Downer, 1955, p. 170). Having established the story-rules and principles, the next step is to identify the principles that govern the formation of relationships that are based on the function of the components. For conflict to arise in a story, the relationship between the protagonist and the antagonist must always be antithetical and governed by opposing forces as in figure [4.4].

CORRELATIONAL RULES

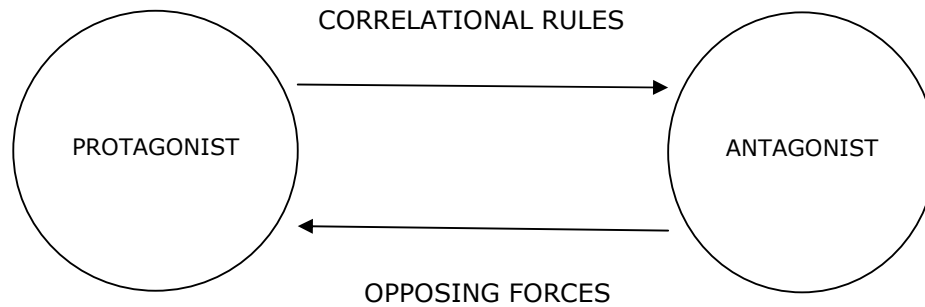PROTAGONIST

ANTAGONIST

OPPOSING FORCES

Figure [4.4] - Correlational rules governing the relationships between components

### 4.3.1 The plotting schema

The next step is to understand the *plotting schema* which describes how a situation is resolved through a sequence of steps at each cardinal node. There could be a multitude of similar steps throughout a [CSS], each resolving a dramatic situation and progressing the story to the next level. The *plotting schema* serves as a way of organizing information that is generated at the various levels of structure because of the [SW] configuration and embeds it in the intermediate structure. Then the *plot algorithm* transforms the grouped information in the intermediate structure and advances it onto the surface structure. As Branigan explains, his *narrative schema* contains eight elements, the combination of which could be used in a variety of ways:

> "It may be helpful to construct a narrative schema in somewhat more detail and illustrate its application to a particular film... The schema contains the following eight elements, or functions, which may be repeated in various patterns to

model our understanding of a given story."
(Branigan, 1992, p. 17 & 18)

However, I refer to Branigan's narrative schema as *plotting schema,*

figure [4.5], since I only use six of Branigan's elements, all of which are

sharing a universal value for narrative.

GOAL                    COMPLICATING
                             ACTION

INITIATING                          PLOTTING                          RESOLUTION
EVENT                                SCHEMA

SUMMARY OF                              DESCRIPTION
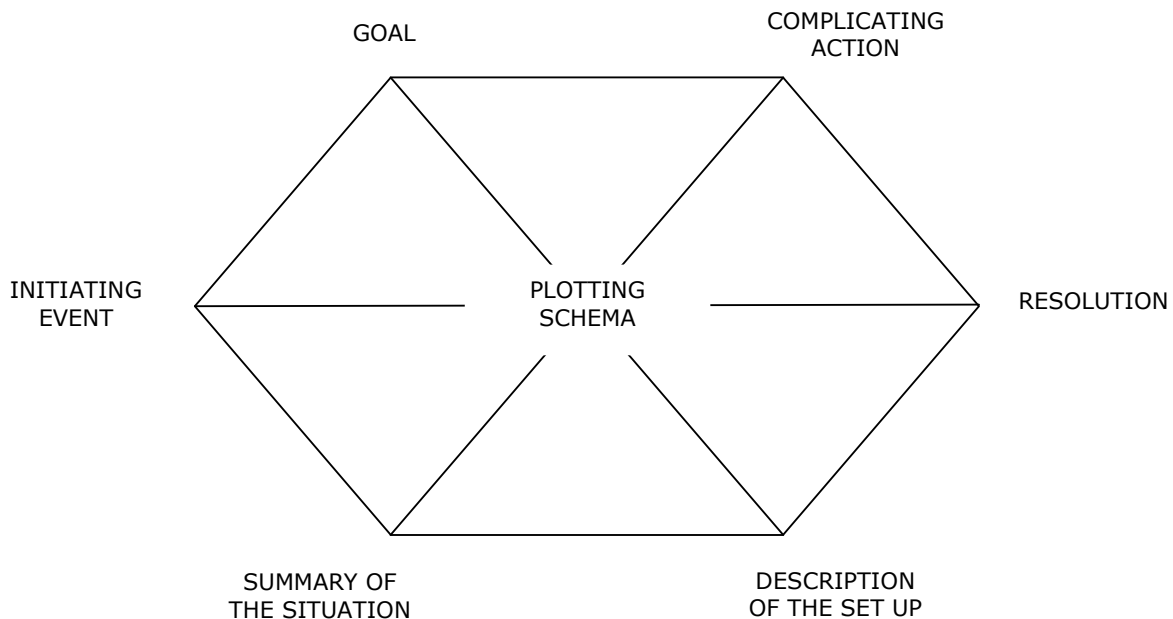THE SITUATION                          OF THE SET UP

Figure [4.5] - The six elements of the plotting schema

The first element is a *summary of the situation* and what is about to

follow, the second is a *description of the set up* and the *current state of*

*affairs,* i.e. spatio-temporal dimensions of the story, characters involved,

background information to be used, location, theme, subtext.  The third

element is the *inciting incident* which alters the current state of affairs,

i.e. throwing the [CSS] off a state of equilibrium, and sets the story in

motion in Act I.  The fourth is a *goal,* which serves as the emotional

response of the hero to the change of the current state of affairs, while the fifth element is a *complicating action*, which stands as the opposing force derived from the antagonist's actions and presents an obstacle to the hero and his goal. Finally, the sixth element is the *resolution*, which stands as the declaration that the equilibrium has been reinstated in the [CSS].

Using the *plotting schema* to progress the story to the next level the author uses as background information whatever the characters have achieved, or learned, in the last structural cardinal node through the application of the previous *plotting schema*. Branigan identifies two more elements as part of his schema, which he calls *narrative schema*; these are the moral lesson learned by the character and the actual narration, which is constantly at work, trying to justify why the author has the ability to narrate the specific events. However, I regard that Branigan's last two elements do not fit in the schema I describe. First because characters do not always learn moral lessons in each cardinal node in a story, thus such an element does not share a universal value. Second, the actual narration that is constantly at work is part of an abstract analysis of narrative that does not seem to be relevant to the current research. By this Branigan seeks to justify why the narrator is competent and credible in writing the specific story, and why the events depicted in that story are worthy of attention.

The *plotting schema* helps the author make a qualitative decision by first taking into consideration the historical state of affairs that preceded the incident at the cardinal node which he currently investigates - a summarization and description of the situation and the current state of affairs. Taking as an example the recent *The Dark Knight Rises (TDKR),* we are quickly introduced to a world where Bruce Wayne has taken the fall for the murder of Harry Dent - description of the current set-up. Bruce Wayne has not made an appearance as Batman in any of the eight years that lapsed since Dent's murder, as the streets have been clean of crime, and he now lives as a recluse in his manor. The story has progressed to a point where the historical state of affairs has been incorporated into the current state of affairs and another set of action is required for the story to progress. This is where a new *plotting* schema comes into effect in order to replace the previous one by grouping story-related information anew. In TDKR, this is achieved by introducing the masked villain Bane and his master plan to destroy Gotham through the kidnapping of a nuclear physicist - the complicating action.

Next comes the identification of the *inciting incident*, the structural point that kick-starts the story. The protagonist will act or react based on the parameters which define her character, what psychological needs motivate her and what is her outer motivation - her goal. The hero will act because of the altered state of affairs caused at structural

nodes such as the inciting incident and the subsequent plot points.  In TDKR, the *inciting incident* happens when Bruce Wayne discovers that his mother's pearl necklace was stolen by Selina Kyle, aka the Catwoman, and his subsequent discovery that she lifted his fingerprints off the safe.

*The plotting schema* is an abstract and schematic representation of the components' interactions and interrelations, and shows how alternative story dimensions are created due to the differences between narrative forces.  The next progression in TDKR takes place when police officer Blake turns up to the Wayne manor and reveals to Bruce Wayne that he knows he is Batman, urging him to come back. Wayne's trusted butler Alfred appeals to Bruce not to don the Batman suit on the basis of the fear of death excuse - the theme of the story. Bruce Wayne ignores Alfred and dons the suit that marks the return of the Batman.  Bruce Wayne's goal all along, established in the earlier Batman films, is to protect Gotham and its citizens at all costs, even at his own.

The important aspect here is not the story component itself but the components that compliment its function, allowing new story complications to arise and further progress the story.  In TDKR, this works in a multifaceted way.  Having acquired Bruce Wayne's fingerprint, Bane, and his army of henchmen, unleash an attack against the stock

exchange, implicating Wayne in a futures' transaction that result in Wayne losing the ownership of Wayne Enterprises. That will result in Wayne giving the control of Wayne Enterprise to Miranda Tate in order to prevent Daggett and Bane from taking over. Soon after, by the midpoint, Bruce Wayne is betrayed by the Catwoman, who leads him into a trap set up by Bane. Bane imprisons Wayne with the sole purpose of having him watch Gotham being destroyed. As I argued in the previous chapters, the story components acquire meaning and importance through the synergetic interaction with other components. For example, the protagonist's goal means nothing by itself unless there are opposing forces standing in the hero's way, putting obstacles and hurdles in his journey to achieve his goal, creating conflict along the way. Opposing forces could be either the hero's own self, an antagonist, or the society at large. In TDKR, the opposition forces come in a duality form as it turns out that Bane has been in love with Miranda Tate and, having been trained by her father Ra's al Guhl, Batman's mentor as well, he helps her to fulfil the League of Shadows' mission - the destruction of Gotham.

Similarly, it really does not matter what one calls an antagonist as long as there is one in each story. Without an antagonist there is no conflict, without conflict there is no substance, and without substance there is no story. In TDKR, the passing to ACT II is marked with Batman teaming up with Blake, the Catwoman, and Lucius Fox as they try together to

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save Gotham.  The film climaxes with Bruce Wayne/Batman sacrificing himself for the city as he flies the nuclear bomb out to the ocean and is resolved first with Lucius Fox discovering that Wayne has fixed the bug with the auto-pilot and then with Alfred seeing Wayne in a Florence cafe in the company of Selina Kyle/Catwoman.  Finally, Blake, whose middle name is 'Robin', inherits the Batcave.

### 4.3.2    Configuration of the individual components

From a limited amount of story components an enormous variety of stories can be created.  This happens, primarily, because of their unique parameterization and the function they perform within each [SW].  A hero, an antagonist and their goals, conflicts and motivations could be regarded as six story components performing two different functions, and populating different levels of structures.  By creating a unique [SW], the author assigns values to a great variety of narrative components, including the above six ones, and could carry on doing so *ad infinitum*, creating one [SW] after another.   The more components are parameterized in a [SW], the more complicated, and eventually complex, the [SW] becomes.   It is evident then that infinite story-worlds can be created through the configuration of a finite number of components.  This process of infinite transformations of a finite number of story components, to which I refer to as *Story-world [SW] parameterization*, is what Simons calls '*modular narratives*' (2008,

p. 113), and Marsha Kinder, professor of comparative literature, as

'*database narratives*':

> "...the dual process of selection and combination that lie at the heart of all stories and that are crucial to language: the selection of particular data (characters, images, sounds, events) from a series of databases or paradigms, which are then combined to generate specific tales." (Kinder, 2002, p.6)

Simons in *Complex Narratives* explains why Kinder with her above

approach nods to complexity theory since she:

> "...breaks up a narrative into its smallest units, which can be recombined into an infinite array of new virtual configurations." (Simons, 2008, p. 113)

As Kinder further explains the database narratives:

> "... reveal the arbitrariness of the particular choices made [by the author] and the possibility of making other combinations which would create alternative stories." (Kinder, 2002, p.6)

The process of story-world parameterization, as a logical framework of

principles and rules, allows authors to deduce the subsequent direction

of the story by evaluating the initial story-assumptions, but 'cannot help

the author to choose which initial assumptions he ought to choose in

the first place' (Minsky, 2006, p. 52).  However, the process of [SW]

parameterization follows a pattern of logical processes which differ in

principle from formal logic.  In a formal, thus rigid, logical process, all

the assumptions owe to be correct in order for the conclusions to be

also correct. As Marvin Minsky, professor of Media Arts and Sciences and a leading authority in the field of artificial intelligence, explains:

> "...in real life most assumptions are sometimes wrong because the 'rules' they express usually have some exceptions to them. This means that there is difference between the rigid methods of logic and seemingly similar chainlike forms of everyday commonsense reasoning." (Minsky, 2006, p. 142)

In a formal logic process, and given that the initial assumptions are correct, one can only deduce that each subsequent step will also be correct. In contrast, the [SW] parameterization process demands more information to be added in support of the initial story-laws and assumptions throughout in order for the story to be consistent. The author has to patch up logical gaps in order to maintain the 'suspension of disbelief'; logical gaps that could have been created by the insertion of inadequate assumptions at any point throughout the story. The more assumptions are inserted into a [SW] the more complicated the [SW] becomes, and thus, more assumptions are needed for the story to be fully shielded, creating this way a chain of events with many weak links. However, this topic is investigated in the epilogue where the economical approach for the insertion of assumptions is analysed. Nevertheless, it must be mentioned here that careful preparation during the [SW] configuration must be the norm, which leads to the right assumptions, minimizing their number when addressing logical problems.

Careful consideration must be given to which assumptions will be removed or inserted in the quest for problem-solving. If an important story parameter that is intrinsically connected with another is removed this will throw the story off its state of equilibrium, and the impact could be non-linear. In this case, either the initial assumption, or the [SW] configuration altogether, has to be re-considered, or a new set of assumptions has to be created that will solve the arisen problems. This is a 'self-correcting' process as authors always have to mentally check whether their stories 'work' or not, and if not, certain steps will then have to be taken for the correction of any issues.

The process of inserting assumptions and narrative components until the story 'works' is repeated until the desired effect is reached. Writers seem to be using a mental method for the construction of synthetic perceptions which eventually translates into the story-world parameterization. This is what Minsky refers to as *simulus*, a combination of the words *stimulus* and *simulate* (Minsky, 2006, p. 157). The *simulus* refers to the process during which writers parameterize all the necessary components that are needed in order for a scene, or a complete [SW], to resemble a real association: it will either be a very basic construct that lacks many dramatic elements, or a detailed construction that adds depth and dimensionality to the story.

### 4.3.3     An example of story-world [SW] configuration

We consider the [SW] to be consisted of two towns, each of which has three citizens.  This is the initial assumption about the set up and the conscious agents.  Additional temporal dimensions will not be added apart from present time.  Also, it will be assumed that the [SW] resembles the real world in great detail.  This will keep the [SW] simple and story-assumptions that relate to any special abilities of the characters that are only encountered in a fantasy world, i.e. a magician, will not be necessitated.

The citizens are in constant conflict over a brawl of land ownership in the space stretching between the two towns.  This is where the psychological needs, goals and motivations of each of the three citizens in each town are laid.  Understandably in a screenplay, a protagonist and an antagonist are always needed, but to maintain the simplicity of the example, an ensemble piece with equal roles for each character has been preferred.  Each town council has to come to a decision over the desired policy of how to resolve the issue that has arisen.  After a lot of heated sessions, both town councils come up with the same three suggestions, voted on a 2/3 majority: the land to be divided equally between the two towns, the land to be divided with a ratio of 3/5 in favour of their town and the land to be divided with a ratio of 3/5 in favour of the other town.  Adding more dramatic conflict,

a hot-headed citizen from each town, who opposes to the equal division of land, will also be implemented.  The hot-headed citizen prefers a more gung-ho approach in favour of his or her own town.

For complication to work efficiently, the implementation of a story-law is needed that dictates that any decision on public policy from the council needs a unanimous vote, in this case all three of them.  What is achieved by this is the creation of an interesting situation with a strong problem lying in its heart.  The dramatic conflict and the characters populating the story-world have been set up effectively and any logical gaps have been patched up by the introduction of the story-law that does not allow the situation to defuse easily.  With the logical framework of the story set up, traits, quirks, backgrounds, physical descriptions, and any detail needed for characters to be consistent and coherent will then be implemented into the [SW] configuration.

As I explained in chapter three, the story will appear to be more spherical if variety is infused into the averaging characters' profiles.  Also, tying up their goals, motivations and needs, and clashing them against each other in order to create conflict, the dramatic outcome of the story will be increased twofold.  Based on the story-laws and the characterizations of its agents, the story will start taking unique turns since the six characters will behave differently from each other to the policies and decisions of their respective town councils.  Some will be

deeply affected emotionally, others moderately or none. Utilizing the agents' individual characterization and abiding to the story-laws, authors structure the story, not by arranging dramatic beats to happen on exact pages, as it has been advocated in screenwriting manuals, but by arranging them along the *state space*, allowing the story to have a forward momentum with enough complications. However, the complications can be enormous and different story-paths can be explored. For example, the dissatisfied citizens decide to change towns or even get into a physical fight to resolve the issue. Assuming that all the [SW] parameters have been set up, the creation of the current state of affairs and the historical path along the [SW]'s *state space* takes place. Subsequently, through the utilization of the *plotting schema*, the story is further advanced, with its resolution to be dictated by all the previous decisions and actions at each cardinal node (plot points or dramatic beats).

### 4.3.4    Breakdown of the story-world [SW] components

Out of the interrelation and interaction of the components, a story emerges, and what follows is a breakdown of the [SW] components:

   i.   *Characters*, and their direct or indirect effect onto their [SW] environment,

ii. *Characterization*, the traits, quirks and background information that adds uniqueness to the characters' being, and their direct or indirect effect onto the characters' [SW] environment,

iii. The characters' psychological *goal*, *need* and *motivation*, either *inner motivation*, *outer motivation* or both. By *inner motivation* I refer to the psychological desire of the character to achieve something for himself, i.e. to feel important, gain respect, to prove he is right. By *outer motivation* I refer to the external forces, or motivating factors, that cause such a character to act, i.e. save his family, find a lost love, reconcile with his brother etc.

iv. The *spatio-temporal boundaries,* as a means to identify the set up of the story in terms of locations and the passing of time,

v. The *properties of the story-world* in terms of story-laws: what is permissible and the assumptions needed for the elimination of logical inconsistencies,

vi. The *relations between the characters* based on their function,

vii. The *dramatic conflict* generated because of the characters' interaction and interrelation,

viii. The *inner* or *external conflict* of a character, usually the protagonist's, without ruling out that of the antagonist's. By *inner conflict* I refer to the psychological state which causes the protagonist to act in a given situation, i.e. lack of self-confidence, inability to handle pressure, extremely shyness, and which affects how the character reacts. By *external conflict* I

refer to the opposing forces standing as obstacles to the protagonist's attempt to achieve his goal. How the character acts and reacts in a given situation is a direct product of the character's unique parameterization,

ix. The *story events* that beget action and reaction,

x. The *history* and *historical affairs* that serve as background information to the story and dimensionalize it,

xi. The *dialog*, which projects the characters' feelings, inner conflicts, flaws, opinions, ideas to the audience, but also conveys necessary information that cannot be communicated in any other way,

xii. The *structural framework*, either this will be the three-act paradigm, its extended paradigm, or any other form of organizing the story into acts,

xiii. The *theme*, the moral lesson the protagonist has to learn,

xiv. The *subplots* and sub-worlds that serve the main plot and investigate the story's main *theme*,

xv. The *action beats* in a scene, the *scenes* and *scene sequences* that serve as the organizing tools of the surface structure.

xvi. The *page count* in a screenplay poses as another limitation to the author's imagination but could also serve as a great disciplinary motivator, or challenge, for the economical presentation of the story affairs. Since the length of the majority of the films currently being made averages about one hundred

minutes, the authors, more often than not, have to make each word count. Superfluous details and dialogue will need to be trimmed and brought down to a more presentable length, thus the presentation of the story must not only be economical but succinct as well.

A necessary addition needs to be made regarding point (viii) - inner conflict - a very important but often overlooked dramatic component as it has the capacity to intensify the struggle and the characters' efforts in overcoming their external conflict and achieving their dramatic goal. Fictional characters could equally be crippled by inner conflicts inasmuch their real-life counterparts. Sooner or later in any story, a character's wishes or interests will clash with another's. As Karen Horney explains in *Our Inner Conflicts*:

> "And just as such clashes between ourselves and our environment are commonplace, so, too, conflicts within ourselves are an integral part of human life... An animal's actions are largely determined by instinct.... In contrast, it is prerogative as well as the burden of human beings to be able to exert choice, to have to make decisions. We may have to decide between desires that lead in opposite directions." (Horney, 1949, p. 23)

Contrary to the characters populating a fictional [SW], and more importantly the hero-types in specific genres, who must be portraying a desire to change and grow, real-life individuals may not be aware of their inner conflicts, thus, they do not always resolve them consciously.

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With regards to real-life characters, and sometimes fictional ones, Horney observes that:

> "... more often than not they drift and let themselves be swayed by accident.  They do not know where they stand; they make compromises without being aware of doing so; they are involved in contradictions without knowing it." (Horney, 1949, pp. 24-25)

Fictional characters of the hero type are more often than not bigger-than-life characters, thus, they must be demonstrating the willingness and capacity to grow while assuming the responsibility for such change.  As Horney explains:

> "This would include the risk of making a wrong decision and the willingness to include the risk of making a wrong decision and the willingness to bear the consequences without blaming others for them.  It would involve feeling, 'This is my choice, my doing,' and presupposes more inner strength and independence than most people apparently have nowadays." (Horney, 1949, p. 26)

Being in tune with their inabilities and having such an emotional capacity to embrace change, fictional agents of the hero type show strength of character, which gains them instant recognisability, and as I will later explain, the audience's allegiance.

### 4.3.5      A fundamental component:  the character

The process of assigning narrative values, or configuring, the agents in a [SW] comes up against some difficulties, not dissimilar with those of

the parameterization of the [SW] itself.   As Garvey argues, there is a distinction between the two types of attributes to fictional characters:

> "...(a) structural attributes, which apply to all characters of all narratives, are described through semantic features; (b) non-structural attributes, which apply variously among characters and narratives...   A full and systematic account of characterization must provide each character with a set of structural attributes, and a set of non-structural attributions, as well as an identification and a temporal orientation which indicates any change in attributes." (Garvey, 1978, p. 63)

The process of character attribution differs in nature from the rigid logical or mathematical method.  Nevertheless, a transition has to be made from the subjective nature of narrative to a more objective capacity in order for the field to be further investigated. Phenomenology creates the necessary conditions that allow the objective study of subjective topics such as judgement, emotions and opinions.  Phenomenology can also be extended in works of narrative since emotions are portrayed in stories through language.   As Sturrock points out, 'language... objectifies it and makes it an inter- instead of an intra-personal truth' (Sturrock, 1986, p. 36).  Authors are able to organize and synthesize fictional story-worlds, constructing its future and past chronological dimensions, and building a state of affairs where the driving force is a cause-and-effect interaction between the characters, who portray the same capacities as their objective and organic counterparts.  Additionally, since the three-act structure has obtained an objective status with universal applicability, through the

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argumentation presented in the first three chapters, a study with phenomenological dimensions can be applied to it as well. The narrative phenomena I've been investigating so far appear to be consistent with *Screenplectics*.

Besides, phenomenology is anti-reductionist in nature as Sturrock explains: 'phenomenology takes subject and object to constitute a whole, and the relation between one and the other to be intentional' (Sturrock, 1986, p. 35). Authors, as much as readers and audiences, are in position to internalize empirical rules, principles and techniques, and perceive story-related input according to their own abilities, imagining, understanding, twisting and adjusting it in order to fit it into their own idiosyncrasies, a process which allows them to produce, perceive and understand an intelligible work of narrative - an objective whole created from subjective input.

Out of this internal process, emotions, structures and themes are communicated to the audience, from grief and laughter to excitement, fear or suspense. The vehicles that facilitate the emotional attachment of the audience are the characters populating the story-world. This interaction between authors the audience, through the one-way deliverance of emotional signals, allows what Murray Smith names 'structures of sympathy' with characters (Smith, 1995, p. 75). As much as it happens in real life when individuals judge others on first

impressions, very much so audiences perceive characters based on their [SW] parameterization, which is elaborated by the input of the director and the actors.  As cognitive psychologist Gordon Bower asserts:

> "Understanding characters in stories and remembering their actions is alleged to use methods and rules similar to those invoked in actual person perception.  We try to understand a character's actions as the manifestation of a plan to achieve some goal or satisfy some motive... Later experiments showed that the meaning a reader derives from a story depends on the character he identifies with.  After reading a story while identifying with a given character, the reader is more likely to recall thoughts of that character, to describe events from his station point, and to give a sympathetic interpretation to his actions." (Bower, 1978, p. 211)

These signs create the necessary cognitive benchmarks or frameworks that allow emotional association, or *recognition*.  The totality of signals, visual and auditory, allow the *alignment* of audience with the characters.  As Bower explains:

> "We find that if the reader conceives of a main character trying to resolve a specific problem, then he uses that as an organizational framework for interpreting actions and events in even an uneventful story - for deciding what is relevant and important, for referring what must have happened between the lines and why.  That framework helps to integrate separate episodes of the text, and it serves as a retrieval prompt for recall.  The character's problem provides the reader with a 'point of view' that influences the way he sets the world inside the story.  And that, of course, determines the meaning he derives from the text." (Bower, 1978. p. 220)

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The results from the experiments Bower conducted suggest that:

> "...when the reader identifies with a given character, he steps inside the character's head and sees things through his eyes. Such identification seems to rely upon a social skill we have all learned, of taking another's perspective on the world, in being able to imagine someone's thoughts and feelings. In our story, identification with a specific character led, first of all, to differences in the reader's subjective imagery, in what objects were in his image and their layout in space, relative to the viewer's point. Second, identifying with a character caused the reader to reflect quite a bit about the thoughts and feelings going through that character's mind. Third, identifying with a character led the reader to explain that character's behavior in different ways from that of other characters." (Bower, 1978, p. 227)

Eventually, a process of evaluation, judgement and questioning of the characters' backgrounds, traits, quirks, moral predisposition, psychological capacities and needs allows the audience 'to build the necessary sympathetic or antipathetic *allegiances* toward the characters' (Smith, 1995, p. 75). Schematically, the 'structures of sympathy' are shown in figure [4.6].

STRUCTURE OF SYMPATHY
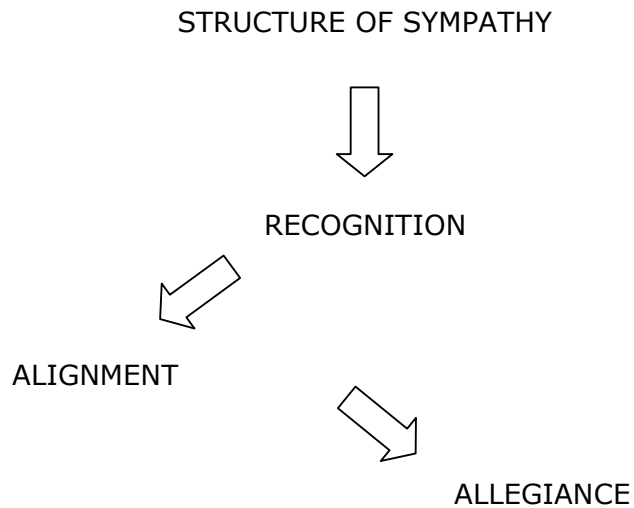
RECOGNITION

ALIGNMENT

ALLEGIANCE

Figure [4.6] - Smith's character identification and engagement (Smith, 1995, p. 75)

Character identification often sparks spontaneous empathy, however

Suzanne Keen notes:

> "Not all feeling states of characters evoke empathy; indeed, empathetic responses to fictional characters and situations occur more readily for negative emotions, whether or not a match in details of experience exists. Finally, readers' experiences differ from one another, and empathy with characters doesn't always occur as a result of reading an emotionally evocative fiction... Characters' involvement in a suspenseful situation provokes psychological responses of arousal in readers even when they disdain the quality of narrative." (Keen, 2006, p. 214 & p. 218)

Keen also proceeds to an interesting observation which emphasizes

the complex nature of character interrelations that allow subtext to

emerge through their interactions:

"Novelists do not exert complete control over the responses to their fiction. Empathy for a fictional character does not invariably correspond with what the author appears to set up or invite. Situational empathy, which responds primarily to aspects of plot and circumstance, involves less self-extension in imaginative role taking and more recognition of prior (or current) experiences. A novelist invoking situational empathy can only hope to reach readers with appropriately correlating experiences." (Keen, 2006, pp. 214 - 215)

The characters, as the prime causal agents and carriers of actions, can be seen as a totality of traits, quirks, background information, psychological inclinations, desires, motivations and needs, with a certain physical, gender and ethnic description, and emotional, moral and intellectual qualities of various levels. In a work of narrative, all the above are parameterized or attributed according to the individual character's function. For example, a protagonist could have traits that will make her likeable to the audience, while an antagonist is most likely to have traits that classify him as a villain. Obviously, there are many interpretations and variations to the above attribution process, as a whole spectrum of functions are available. The issue here is not whether the character is likeable or not, a stereotype or a truly multidimensional interpretation of a real-life persona, but that the character has a function to which she has to abideto. Special attention must be given to the attribution of the characters' goals, motives and needs as these call up plans that precede causal actions for the satisfaction of the characters' dramatic motivations.

The need of mainstream Hollywood films to reach mass audiences dictates an inclination for the utilization of stereotypes in stories and the facilitation of unambiguity. However, authors are often forced to adjust and refine the characters' traits as the story progresses in order to address a plot-hole. The process of attributing conscious-like agents starts with creating simplified versions of real life-like individuals that will be pitted against each other; the totality of their background information will be tested by the author through a critical process of identifying any possible plot-holes and corrected if needed.

Aristotle identifies two reasons which make the audience emotionally respond to characters. First is the direction of the 'change of the fortunes' of the protagonist from good to bad, or vice versa, and second, the moral predisposition of the characters involved in this change of fortune, i.e. 'virtuous or wicked' (Aristotle, 1996, pp. 21-22). Aristotle identifies that emotional response to a situation presupposes identification of the situation itself by the audience. This identification can only be triggered if the analogous information has been implemented in the screenplay. This applies not only to the moral qualities of the characters and the psychological causes forcing them to act, which 'is open to ethical evaluation' (Heath in Aristotle, 1996, p. xxxviii) by the audience, but also to the 'identity of the characters, the occasion, the means and the motive' (Aristotle, 1996, pp. 43-44). Aristotle also recognizes that the most effective tools to spark such

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responses are the '*plot reversals*', or plot points, often accompanied by 'a major revelation of deep change in the fortunes of the characters' (Aristotle, 1996, p. 12).

This exchange of information between the conscious agents and the change in their emotional state is a product of the interaction between characters based on a system of differences between the qualitative values of their traits.  For example, if an author wants to create a scene where the characters experience fear, first, she has to create the necessary spatio-temporal conditions that will put the characters in a depressive emotional disadvantage, and second, the psychological effect on them must be linked directly to the characters' primeval need for survival, either theirs or someone who is close to them.

In terms of dramatic conflict, if the conditions in a scene or a scene sequence are in a state of equilibrium, thus no meaning through differences is created, then emotions will be almost entirely absent. This is why Aristotle put so much emphasis on the audience feeling the right emotions in the right time, or as Malcolm Heath points out: ' to feel them at the right time, in response to the right thing, with regard to the right people, for the right reason, and in the right way - that is the mean and the optimum' (Heath in Aristotle, 1996, p. xxxviii).  The optimum level is obtained from the ability of the author to identify and implement the necessary character traits and spatio-temporal

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conditions of the [SW] and project them in a way that maximises the story's dramatic effect. Thus, a certain level of logical consistency among the characters' traits and their psychological dimensions is needed as Minsky explains:

> "... a person with coherent goals should usually do better than one encumbered by conflicting ones."
> (Minsky, 2006, p. 62)

Based on the psychological research conducted by Thorndyke, Mandler *et.al* discussed in the previous chapters, audiences seem to be responding better to stories which demonstrate a clearly defined structure and a goal-oriented trajectory for the characters. Thus, the above remarks of Minsky and Heath link back to Murray Smith's conclusions about the engagement of the audience with the fictional characters. The interpretation of the projection of the emotional changes by the audience are based on first impressions, or a series of inferences, that 'vary in degrees of objective rigor' (Paulos, 1998, p. 11). Conscious agents should be considered the fundamental component for the understanding of screenplays as complex systems since the events to which they respond, and the causal and event-driven activity in which they engage to, are 'products of their qualities' in the first place' (Bordwell, 2008, p. 89). Put in other words, characters create plot and plot forms characters, both intermingling to create a story. Conscious agents are used as structural components, among other functions, because other characters and events exist:

"...because of the character and, in fact, it is only in relation to it that they posses those qualities of coherence and plausibility which make them meaningful and comprehensible." (Ferrara, 1974, p. 252)

Where plot and character intersect, conflict is created, which:

"'...grows out of what the character values, what he struggles for, what matters to him individually."
(Kress, 1998, p. 159)

Presented in the appendix is a list of possible characterization categories that could be parameterized in a [SW].  The list can be endless and can only be summarized with great effort, therefore, it should not be limited to the options presented.  [see appendix, 4.3.5]

### 4.3.5.1    Character as the core structural component

Defining fictional characters is more than a summation of their personalities and the unique accumulation of traits which creates an entity with a psychological edge.  Chatman refers to traits as those humanised psychological qualities that are stable, recurring in frequency, or abiding.  In other words, being consistent to the character, which could either unfold, emerge or be replaced by other traits throughout the story, or even disappear entirely, and which differ from feelings, moods, thoughts, attitudes and motives.  As Chatman explains:

> "I argue - unoriginally but firmly - for a conception of character as a paradigm of traits; 'traits' in the sense of 'relatively stable or abiding personal quality', recognizing that it may either unfold, that is emerge earlier or later in the course of the story, or that it may disappear and be replaced by another... At the same time, traits must be distinguished from more ephemeral psychological phenomena, like feelings, moods, thoughts, temporary motives, attitudes, and the like."
> (Chatman, 1980, p. 126)

An example of a personality trait is a character who, whenever he or she dines out, re-arranges the condiments on the table every single time, a recurrence of action which borders on obsession. By making that character aware of such behaviour, this personality trait, as part of the character's transformational arc, can be replaced or removed as it could be interfering with the character's psychological elevation or conscientious change. A trait, which could be shared among different persons, or characters, is a psychological condition which acquires a status of uniqueness because of the persons' individuality, which has been moulded by their interaction with their environments; and it can be projected outwards with a variety of ways. Psychologist Gordon Allport, who was focused on the study of personality, researched psychological traits, identifying eight properties, out of which two are appropriate for this research:

> "A trait is more than a habit and belongs to a system of interdependent habits, to which the trait adds a sense of underlying interrelatedness and interconnectivity." (Allport, 1966, pp. 1-10)

Allport draws an example of interrelation between a person's dominative habit and the habit of bluffing past guards, recognizing that there is an underlying trait which connects these two habits, adding consistency in the actions of the person through repetition:

> "To identify a trait as a valid one, repetition is needed [throughout the story] in order to establish the underlying determinant psychological factor which adds consistency to the character's actions."
> (Allport, 1966, pp. 1-10)

In other words, if one of the traits is 'aggression' more than one scene showing a character to be aggressive is needed in order for repetition to be established, and thus, such personality trait to be identified as one in the story. For example, in *The Reader*, Hanna Schmitz, played by Kate Winslet, is established early on as a character who cannot read, or write, and thus asks her young boyfriend to read her stories instead. Her trait is shown several times in various parts of the story and up to the point that she is facing a trial for crimes committed in second world-war Germany's concentration camps. During the trial she is asked to provide her signature in order to be used as evidence in support of her case. Unable to write, Hanna Schmitz fails to do so and she is sentenced to a life in prison. As Chatman points out:

> "Narratives may not examine habits microscopically, but they do demand of the audience the capacity to recognize certain habits as symptomatic of a trait: if a character is constantly washing his hands, mopping already clean floors, picking motes of dust off his furniture, the audience is obliged to read out a trait like 'compulsive'." (Chatman, 1980, p. 122)

Even though traits and habits must remain consistent to the character, the characters' acts do not always abide to such consistency as Chatman argues:

> "...the observation that 'acts, and even habits' may be inconsistent with a trait and that within a given personality there may inhere conflicting traits is absolutely vital to modern character theory. The first point explains how an essentially evil character, like Valmont in *Les Liaisons Dangereuses*, may perform a virtuous act; the second accounts for complex, 'rounded' characters, like Hamlet or Leopold Bloom." (Chatman, 1980, p. 123)

As Rimmon-Kenan notes, the principles of cohesion are 'repetition, similarity, contrast and implication' (Rimmon-Kenan, 1983, pp. 39-40). *Repetition* is the process which marks a certain behaviour as a trait and *similarity* is the encounter of the same behaviour on different occasions. *Contrast is* the conflict which may be arising between characters due to their acts, and *implication* is the way actions are projected in a screenplay. The fully rounded characters are a combination of a variety of traits, habits, psychological beliefs, motives, needs, goals, and the rest of the characterization categories mentioned before; they can grow and change in a screenplay, surprising the audience with the depth and unpredictability of their behaviour and the contradictory nature of their acts. Chatman makes the observation that 'round characters':

> "...may inspire a stronger sense of intimacy, despite the fact that they do not 'add up.' We remember them as real people. They seem strangely familiar. Like real-life friends and enemies it is hard to

describe what they are exactly like." (Chatman, 1980, p. 132)

On the other hand, flat characters are distinguished by a single trait, the total lack of traits or habits thereof.  Imagine Joe,  a character who likes soft ice-cream, a description that summarizes the totality of his fictional existence.   Joe's function in a story, based on the initial parameterization of his fictional persona, is to eat ice cream.  Without showing Joe acting or reacting to anything else, his behaviour appears highly predictable and monotonous.   Although audiences are still invited to interpret Joe's behaviour as they wish and draw conclusions from it, Joe's lightness of being causes his character to be easily forgotten.    On the contrary, the richness of three-dimensional characters creates a tighter sense of intimacy, establishes emotional links with the audience, elicits recognition, alignment and allegiance, forcing the audience to remember them as 'they seem strangely familiar.  Like real-life friends and enemies...' (Chatman, 1980, p. 132).

By assigning parameters to the majority of the characterization categories, the actions of a fictional character populating an *ad hoc* [SW] can have an intricate and immediate implication on the plot.  For the projection of the characters' inner dimensions to the audience and how their actions affect the plot, James Garvey has proposed a system that is consisted of:  i) *structural attributes*, which apply to all characters in all narratives, and of ii) *non-structural attributes*, which apply to

individual characters.  *Structural attributes* appear to have a universal applicability, whereas *non-structural attributes* do not.  According to Garvey (1978, pp. 73), an attribute proposition consists of a *character*, a *predicate* and a *modalizer*, with the process being described as such (Garvey, 1978, pp. 74-75):

- A set of physical attributes implies a psychological Attribute Proposition - (AP).  An example of this is:

  *Joe [character] taps his leg*  $\longrightarrow$  [*modalizer*] *Joe is anxious [predicate]*

- A set of psychological attributes implies another (AP). An example of this is:

  *Joe [character] continuously locks and unlocks the door & Joe continuously cleans already cleaned areas*  $\longrightarrow$  [*modalizer*] Joe has a compulsive disorder *[predicate]*


- A set of physical and psychological attributes implies another psychological (AP), which can also have another level of a physical dimension.  An example of this is:

  *Joe [character] walks into a shopping mall & Joe becomes fearful*  $\longrightarrow$  [*modalizer*]   *Joe is agoraphobic* with the physical dimension of his psychological state being *[predicate]*  $\longrightarrow$  [*modalizer*] *Joe runs away [predicate]*

The above process seems to be delivering to the surface structure the inner complications of characters, unveiling traits, habits and dimensions of their personalities out of which emotional bridges are established with the audience.  One could only feel sympathy for Joe and his inability to socialize because of his agoraphobia or his compulsive disorder, especially when these habits and traits interfere with Joe's ability to function as a decent human being. Joe's behaviour in the [SW] is affected, transforming him into a tragic hero who lacks escape routes.  Adding more obstacles to Joe's journey, apart from his inner and external conflicts, the emotional allegiance of the audience will be deeper and long lasting.  However shallow or unromantic this may sound, the "emotional manipulation" of the audience is the first step towards a successful story with enough dramatic conflict.  In *As Good As It Gets*, Jack Nicholson's Melvin Udall suffers from obsessive-compulsive disorder (OCD) and excessive levels of anxiety.  He engages in unusual and repetitive behaviours such as sitting at a particular table to have breakfast, demanding being served by the same waitress, whom consistently berates and insults, and insists on using his own plastic utensils.  When one day the waitress does not turn up because of her child's illness, Udall is thrown out of the cafe because of his repetitive OCD behaviour.

In order for the author to be able to reach a state of dramatic effectiveness, she has to follow a process of evaluation of the characters' totality characterization parameters and their [SW] functions, discarding the psychological, physiological, intrapersonal, sociological and intellectual parameters that do not seem relevant to the story at hand. To achieve this, the categorization of the parameters in distinct groups is needed (Rescher, 1975, p. 42):

- *Actual parameters*: this category includes essential existential parameters without which the existence of a character is impossible, i.e. height, weight, ethnicity, etc.

- *Necessary parameters*: includes necessary parameters which serve the story and plot,

- *Possible parameters*: parameters that have not been utilised in the story yet but serve as a pool of available, and compatible, parameters that could prove useful in a re-evaluation or re-write,

- *Non-possible parameters*: parameters that are incompatible with the characters' functions unless the [SW] is re-configured in order to elevate such parameters to *truth-value* status.

This categorization implies that there is an inherent hierarchy of the characterization parameters based on their importance. Authors rely on a system of heuristics to make decisions and reach conclusions in terms of plot direction and character exposition. When the stage of character creation is completed, authors then proceed to the

characters' hierarchization, categorizing them according to their function and importance. The actions of the characters which affect the plot or other characters can be used as a measurement tool for identifying their importance in the story. These important actions, either performed or received, are called *core events*, or 'kernel events' (Chatman, 1980, p. 140).

Based on such criteria, the events and actions can be further categorized as *satellite* and *trivial*. The function of *core* events or actions is 'to advance the plot by presenting alternatives' (Rimmon-Kenan, 1983, p. 16) to the characters in each bifurcation node. *Satellite* events or actions do not affect the plot directly by presenting alternatives but they may create *core* events or actions which in turn affect the plot. *Trivial* events or actions do not affect the plot at all, either indirectly or directly. *Core*, *satellite* and *trivial* events can be upgraded or downgraded accordingly as the story progresses but not always. Events that were initially presented as *core* events can be downgraded to *satellite* or *trivial* events, and vice versa.

An analysis based on their function can also categorize characters as *core*, *satellite* and *trivial* structural components. The primary characters can be regarded as *core* components belonging in the deep structures. Primary characters affect and are affected by the plot directly while secondary characters only do so indirectly; trivial

characters are only being used to add dimensionality into the story. Retrospectively, characters can be identified as having being upgraded or downgraded since 'they have altered their behaviours in anticipation of the actions of others' (Miller and Page, 2007, p. 115). So the actions of characters are another dimension of the [SW] parameterization process. In relation to this Herman argues that:

> "In principle any action told about in a narrative can be analyzed into values satisfying these slots [of the parameters of the characters' actions]... Not all of the values have to be specified, however, for a given act to be identified and understood. Some can be inferred pragmatically by the slots that do get filled in [by the existing parameterization of the author]." (Herman, 2002, p. 63)

Primary characters are the cornerstones of narrative as Lajos Egri explains:

> "...the pivotal character knows what he wants. Without him the story flounders... in fact, there is no story." (Egri, 1960, p. 106)

Furthermore, what elevates a pivotal character to the level of a protagonist is a call to action or reaction to the antagonist's plan and not because the character has chosen to. The motivation for the protagonist to act could be either inner, outer or both as she has to grow, change and rise to the challenge; and there is something at stake or in jeopardy she always values: the safety of her family, her own survival, her property, her honour, etc. As Egri argues:

> "...a pivotal character never becomes a pivotal character because he wants to. He is really forced

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by circumstances within him and outside of him to become what he is." (Egri, 1960, p. 108)

These observations are in accordance with my arguments that character and plot, within the totality of the [SW]'s boundaries, are interconnected and interrelated in whole, completing and complementing each other. This holistic approach, which is also advocated by Egri in both his books *The Art of Dramatic Writing* and *The Art of Creative Writing*, is opposite to the Aristotelian notion that character is secondary to the plot and 'that conscious agents are only the bearers of actions and nothing more' (Heath in Aristotle, 1996, p. xix). However, Aristotle recognizes that character, plot and commonsensical reasoning 'relate to the object of tragic imitation' (Heath in Aristotle, 1996, p. xx), since both action and character are the determinant factors of the characters' success or failure, and calls for consistency in their actions and characterization. According to Heath, the latter:

> "...obviously follows from the requirement of necessary or probable connection. If someone in a tragedy acts inconsistently and unpredictably, then one cannot say that what they do follows necessarily or probably on what has gone before."
> (Heath in Aristotle, 1996, p. xlv)

This inconsistent behaviour causes the historical path of the [SW] to collapse, destroying any sense of continuum or continuity in the story, damaging the emotional connections that have been established so far, and hindering the story's forward momentum. The reason is that

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audiences expect characters to act consistently, somewhat predictably, and "in-character" for the duration of the story. Mathematician Allen Paulos notes that:

> "...many stereotypes permit the economy of expression necessary for rapid communication and effective functioning." (Paulos, 1998, p. 28)

Sometimes stereotypes are used for the audience to "get into" the story faster, utilizing any mental benchmarks they have created by watching similar films in the past. Such is the case, for example, why several motion pictures have a police officer or detective as their primary hero. The audience knows what to expect before actually going to the cinema. As I explained in chapter three, audiences identify and connect with the characters faster, and the story has an increased level of stability. This allows the creation of story-worlds in the most economical way: by employing stereotypes for the primary and secondary characters who execute a specific function and who have a set agenda. The use of stereotypes also allows authors the luxury of not having to explain everything that happens in the story. This way they spend less time parameterizing the characters through utilization of stereotypical functions. In relation to this, Paulos notes that:

> "'... stereotypes do violence to particular cases and individuals but pay their way to summarizing general information the many exceptions to which would be too time-consuming to note." (Paulos, 1998, p. 29)

The process starts off with the economical insertion of possible assumptions regarding the parameterization of characters. Authors then proceed to the correction of logical inconsistencies and plot-holes. As the process continues, more complex assumptions and principles are introduced, which address more complicated issues that complexify the story further.

### 4.3.5.1.1    Goal-orientation: a key component of parameterization

Characters, and especially protagonists, at least in the majority of Hollywood motion pictures, are goal-oriented agents, who seek to restore the equilibrium of their current affairs. The goal-orientation of Hollywood narrative adds forward momentum and direction to the progression of the story while it narrows down the possible bifurcation options. Goals, as Bordwell *et al.*, point out:

> "...become latent effects in the causal series: they shape our expectations by narrowing the range of alternative outcomes of actions." (Bordwell et al., 1988, p. 16)

Taking into consideration that all individuals, dramatic personas too, strive for the satisfaction of their psychological and intellectual needs, the importance of goal-orientation is reflected upon the creation of conflict between characters. In accordance to this, Bordwell explains that the goal-striving pattern:

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> "...very likely springs from the human inclination to seek intentions behind every action and to recognize that society is riddled with clashes between individuals, all eager to fulfil their own needs." (Bordwell, 2008, p. 117)

Miller and Page note that due to the goal-orientation behaviour of the social agents complex patterns of interaction emerge as the individuals seek connections with one another and alter their behaviour in a variety of ways, in anticipation of the actions, or reactions, of others:

> "Nonetheless, a lot of social behavior, especially with adaptive agents, generates much more complex patterns of interaction. Sometimes this is an inevitable feature of the nature of social agents as they actively seek connections with one another and alter their behavior in ways that imply couplings among previously disparate parts of the system. Other times, this is a consequence of the goal-oriented behavior of social agents."(Miller and Page, 2007, p. 28)

Unclear character goals could create plenty of disorientation, not only to how the audience absorb the on-screen information, but to the authors themselves as well. This is especially evident during the early development stages of the [SW] where authors attempt to balance all the dramatic components, draw interconnections that will enhance the plot, and create interrelations between the characters in order to bring the story to the desired state. Without a clear goal, the character will seem lost, merely a drifter without a sense of direction, and the progression of the plot and the pace of the story will suffer. Peter Brooks states that 'plots are not simply organizing structures, they are

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also intentional structures, goal-oriented and forward moving' (Brooks, 1984, p. 12). Cognitive psychology experiments have shown that the existence of a goal liberates the audience from the constraints of constantly wondering "what the story is about":

> "However, explicit statement of a goal lessens the listener's burden in structuring the story, since it can be inferred that a goal path is about to take place. When no goal is mentioned, the listener must analyze the following to determine if in fact a relevant goal exists in the underlying structure."

Assigning a character a goal is like assigning her a task. Thus, notions of chance are eliminated from the story since what follows is a product of the character's actions to accomplish the task she's been given. The change to the hero's current affairs and the restoration of the state of equilibrium to both the current affairs and the [SW] at large could be shown as a forward-thrusting process undertaken by her in figure [4.7].

Goal to be achieved

Obstacles to be
eliminated

Possible Actions

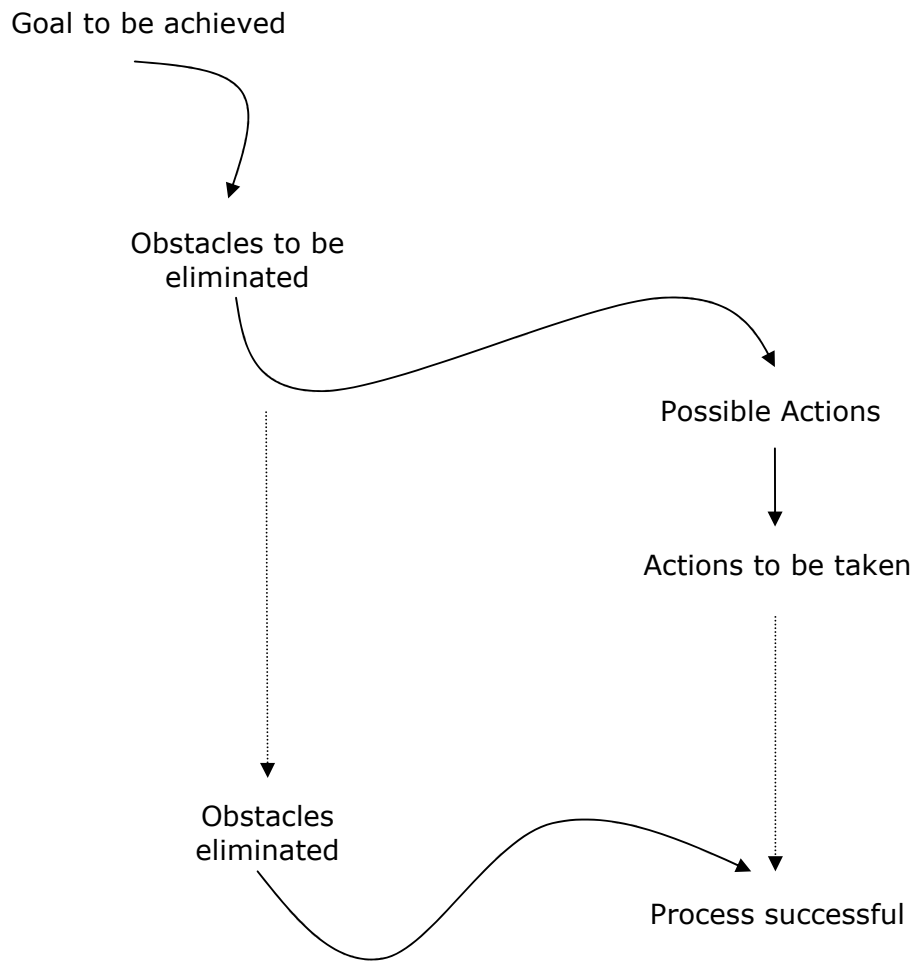Actions to be taken

Obstacles
eliminated

Process successful

Figure [4.7] - Restoration of the equilibrium based on a forward-thrusting goal-oriented process

(Bremond, 1980, p. 393)

Whether the goal is achieved or not, the outcome is projected clearly onto the surface structure by the hero's tangible actions. Such actions will either be generated consciously or they will be just reactions to the antagonist's actions. What underlies the hero's actions is the psychological state we call motivation - why the hero acts the way she does. Motivation is not always evident onto the surface structure and is

usually absent from genre films that have a built-in audience and tend

to rely purely on their plot.  The importance of motivation is underlined

by Perkins when he argues that:

> "...[cause-and-effect] can also distort a movie's time processes since cause-and-effect are products of the retrospective view... whereas motives and possibilities are among their dynamic counterparts.  An event becomes a cause only in its relation to webs of circumstance, together with, say, desires and fears." (Perkins, 2005, p. 22)

Following my arguments in chapter three, holistic stories utilize equally

plot and character in all the dimensions of their dramatic endeavour,

i.e. inner and outer conflicts and motivations. The underlying

psychological motivation of the hero adds depth to the dynamism of

the story and its plot.   William Miller states that:

> "...motivations are dynamic; they underlie and impel the actions of the character.  Some motivations are deep-seated, influencing an entire life course...  Other motivations are situational and could change with the varying developments of the story. The pattern of motivations gives consistency and thus justifies the actions of the characters." (Miller, 1998, p. 85)

The decision-making mechanism of the dramatic conscious agents are

similar to the decision-making mechanism of their real-life counterparts.

Some decisions involve rational thinking and a utility maximization

principle, like investing money or buying property, while other decisions

involve emotional thinking such as intuition, instincts or personal

preferences, i.e. getting involved in a romantic relationship.   The

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actions of all individuals are better understood if the motivation which 'compels them to act as they do' (Egri, 1960, p. 34) is also understood. Branigan argues that through the emotional alignment of the audience to the hero, his psychological capacities and his struggle to ameliorate his state of affairs, is how stories are understood:

> "...in terms of categories of information which are stated as propositions, interpretations and summaries rather than remembering the way the story is actually presented." (Branigan, 1992, p. 15)

Thus, the goal of conscious agents can be categorized as the most important of the structural dramatic components in a story. It is the pursuit for the achievement of the goal, after all, that shapes a [CSS], linking scenes together in a web of interconnectedness. From a structural point-of-view, goal is the underlying organizational component which unifies the whole. Paul Levitt argues that 'before we can analyze the relation of the part to the whole, we must know what the whole is or means' (Levitt, 1971, p. 19). Understanding how the whole functions entails that its unifying principle is also understood, since:

> "this governs the order and arrangement of the parts, forcing them to unite into an intelligible whole. That is , to understand a [screen]play] is to understand what unifies the action of it: plot, character, theme or some combination of these."
> (Levitt, 1971, p. 19)

The conscious agent populating a [SW] is shown in a semantic representation in figure [4.8]:
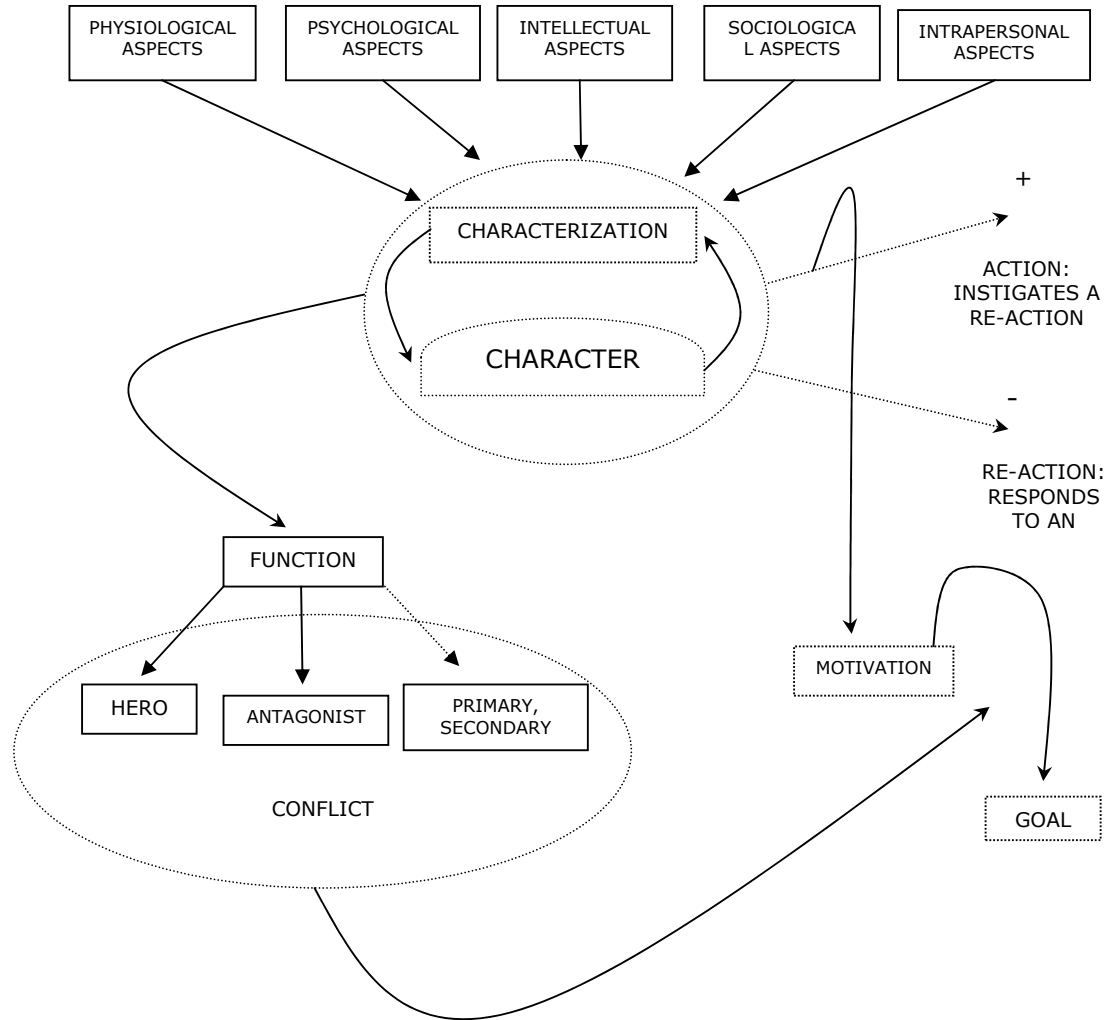
Figure [4.8] - Semantic representation of the fictional character and its function within a [SW]

Investigating the character as a crucial structural component, and not as a standalone entity, the [SW] interactions and interrelations can be better identified through semantic networks. Semantic networks have the ability to represent, or emphasize, the relationships between the various components of a structural framework. The relationship of the character to the [SW] is shown in figure [4.9], while the relationship of the protagonist to the antagonist is shown in figure [4.10]:
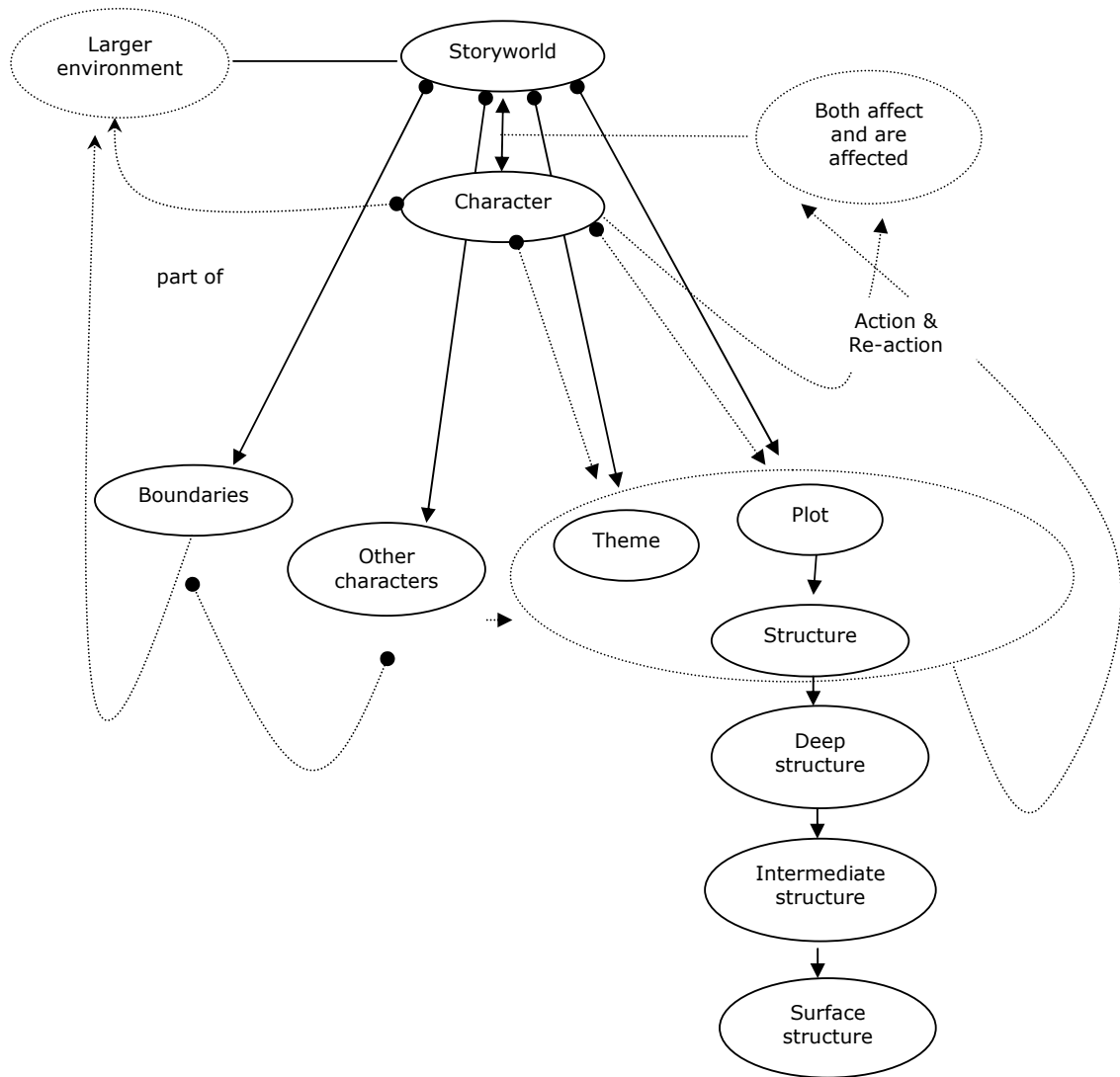
Figure [4.9] - Semantic representation of the character to the [SW]
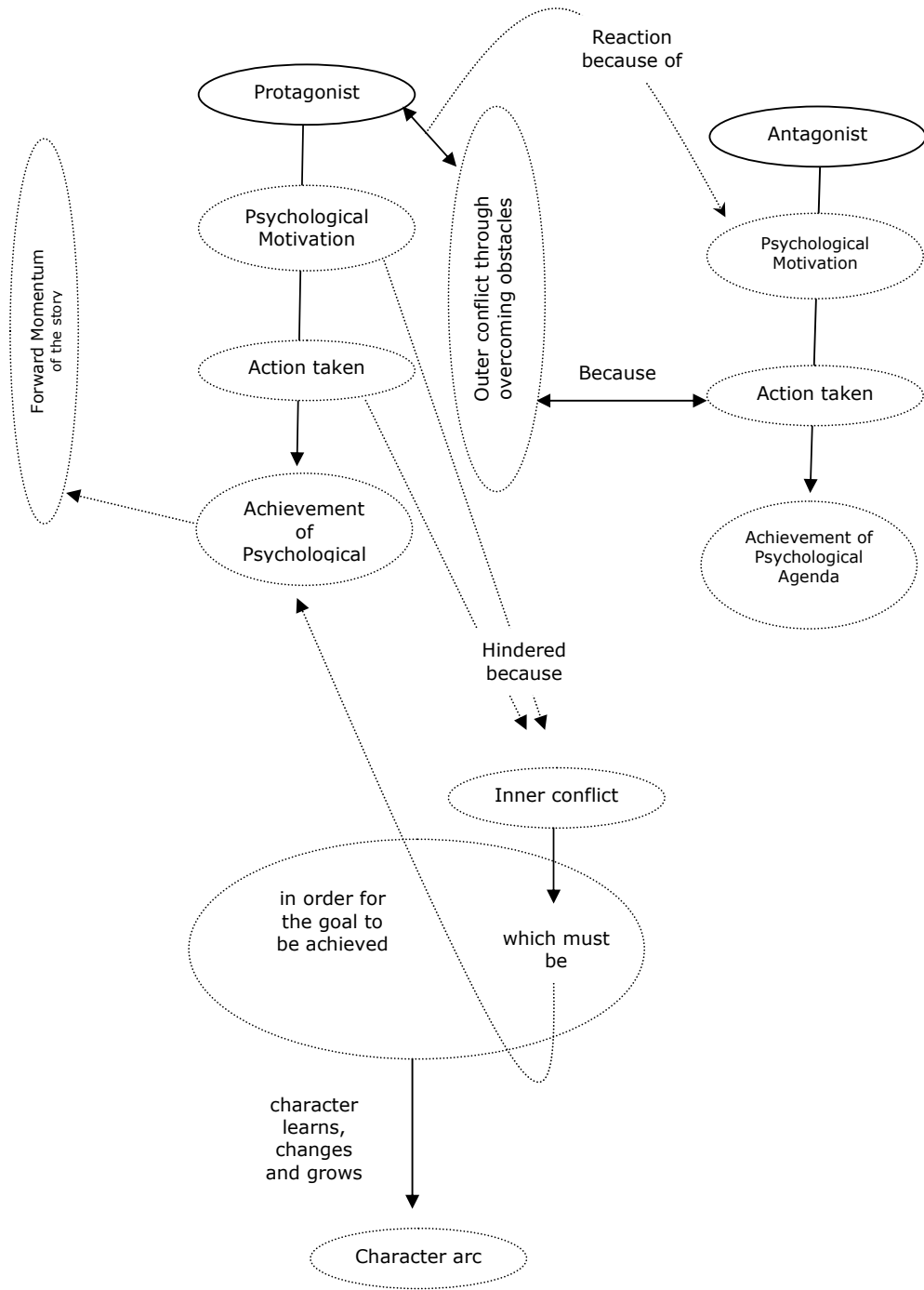
Figure [4.10] - Semantic representation of the relationship between

the protagonist and the antagonist

### 4.3.5.2        Fictional characters and their actions

As it has been mentioned in previous chapters, fictional characters either act to prevent a change or instigate one. In his seminal work *The Logic of Action*, Georg Henrik Von Wright regards action as an intentional 'at will' process 'to bring about or prevent a change' (Von Wright, 1996, p. 121), while not acting could be regarded as 'leaving something unchanged or let something happen' (Von Wright, 1996, p. 121). Von Wright also gives special importance, from a philosophical perspective, to the definition of *change* as a 'transformation of states, where a change takes place when a '*state of affairs* ceases to be or comes to be' (Von Wright, 1996, p. 121). Attempting a narratological approach in defining action, Jan Christoph Meister asserts that:

> "...as a quasi-perception of fictional objects which appear in changing states of affairs, a narrated action initially appears to be a depiction of events which have been brought about by individual agents. We understand each such event as the result of the intentionally governed doing of a fictional agent who behaves in a certain way or plans and eventually enacts one such doing or another." (Meister, 2003, p. 42)

Meister also adds that an event:

> "...can be considered an action when it has manifested itself in an objective result and been caused by the intentional behaviour or doing of a rationally planning agent." (Meister, 2003, p. 48)

The above statement implies that in order for an event to acquire an objective state, and thus to be regarded as an action, the motivation of the characters must be present, or in other words, their actions must be powered by motivation. Van Dijk seems also to be converging to the same conclusion when he argues that:

> "The main idea is to give an explicit, systematic account of the properties of human action, that is, of the fact that, intuitively, people in certain circumstances and with certain purposes do '*something*.' The basic primitive terms in such an account are *intention*, *person*, *state* or *possible world*, *change*, *bring about* or *cause*, and *purpose*." (van Dijk, 1975, p. 277)

The psychological dimension behind the characters' actions plays an important role not only in the cause-and-effect unfolding of the plot but also in the emotional alignment of the audience with the characters. It would be hard to separate actions from the psychological need that caused them in the first place. Van Dijk argues that a feature that puts intentionality into a broader perspective of actions is *purpose*:

> "...a purpose is a mental state (or event/process) exerting functional control over our (intended) actions with respect to their further consequences."
> (van Dijk, 1975, p. 280)

John Searle argues that actions have two main components - the action itself and the event or the series of events this action creates:

> "... the action, for example, of raising one's arm, contains two components, the experience of acting (which has a form of Intentionality that is

both presentational and causal), and the event of one's arm going up." (Searle, 1983, p. 91)

As Aristotle explains, the characters' actions are based on the qualities of their characterization:

> "...the goal of life is an activity, not a quality; people possess certain qualities in accordance with their character, but they achieve well-being or its opposite on the bases of how they fare. So the imitation of the character is not the purpose of what the agents do; character is included along with and on account of the actions." (Aristotle, 1996, p. 11)

To have a detailed description of the action and the change it brings to the state of affairs, one has to define: i) the initial state of affairs of the [SW] when the action is instigated, ii) the state of affairs after the action has taken place, and iii) the effect the action had, or will have, on the state of affairs (Herman, 2002, p. 55; Von Wright, 1996, pp. 123-124). Actions can be broken down hierarchically to varied degrees, from *core actions* which create *core events* and have a crucial effect on the plot, to *satellite actions* which create *satellite events* but their effect is less severe. Actions that contain no intentionality or have happened randomly can be referred to as *doings*:

> "In most philosophical treatments of action, this notoriously vague but important notion of intention is used to distinguish actions from nonactions, like doings, bodily movements, or other events." (van Dijk, 1975, p. 279)

In a screenplay, the first core event that puts the story into motion is usually the *inciting incident* or *catalyst*, and the second, which solidifies the fact that a major change has disturbed the equilibrium of the [SW], is the first plot point. Both events populate the initial state of affairs of the given story-world. The altered *state of affairs* is presented in the second act with the various plot points encountered in it posing as beats portraying the hero's efforts to re-instate the state of affairs to its initial state, or the actions of the antagonist to prevent the hero from achieving this. The effect an action has to the state of affairs is usually presented as the jeopardy which looms over the hero. In other words, it refers to the fate which awaits the fictional characters if the antagonist is successful in achieving his plan, and which it can be a universal danger, a personal one, or at times both.

Each character's possible plan of actions is pieced together by a sequence of individual acts which 'rank best among the possible courses of action which are within the agent's ability in the various acting-situations' (Von Wright, 1996, p. 136). Thus, the process of the possible course of action in a [SW] can be broken down into stages: i) the formulation of a goal that needs to be achieved, ii) the actualization or non-actualization of a set of actions for the achievement of the goal, and iii) the attainment or non-attainment of the goal in question (Herman, 2002, p. 56). The course of action, with the use a *plot algorithm*, can be shown schematically in figure [4.11].
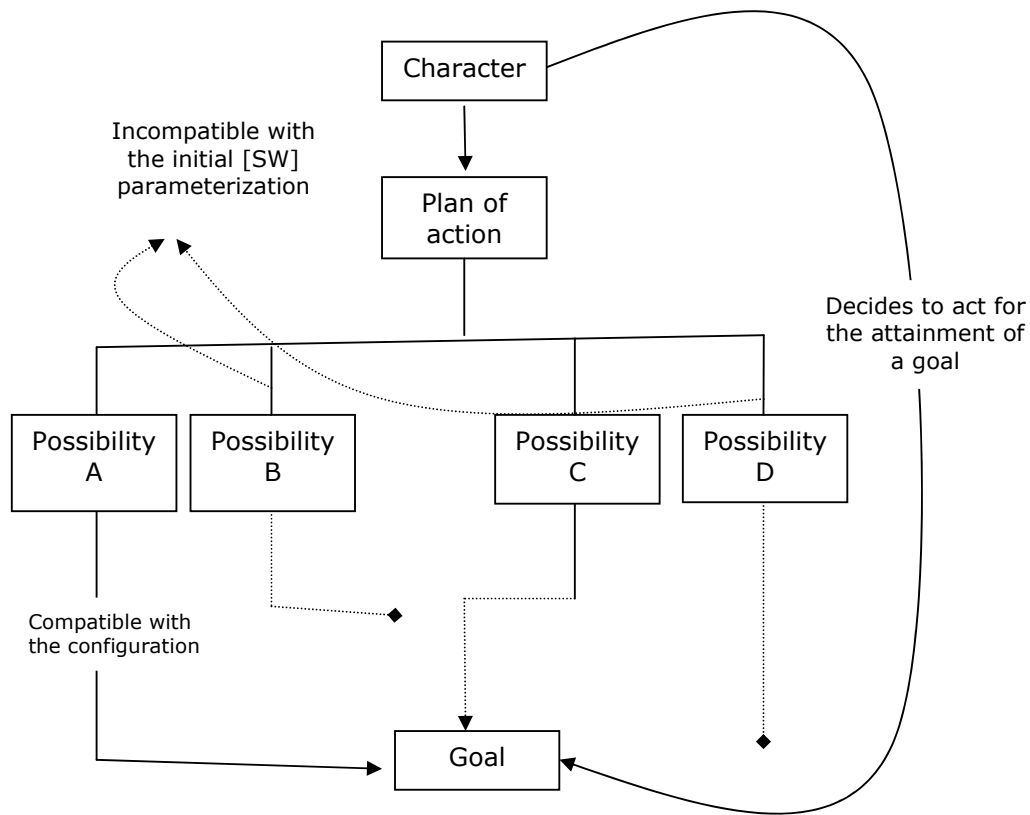
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Figure [4.11] - Semantic representation of a plan of action

In figure [4.11], a character decides to act for the attainment of a goal. The potential plan of action contains endless possibilities of individual sets of actions (A, B, C, D) that could bring the character closer to the desired state with a varied degree of success. For example, possibility A is the only set of individual actions that materializes the attainment of the goal for the character, based entirely on the initial parameterization of his characterization and that of the story-world. Possibilities B & D will never allow the character to achieve the goal, either because the limitations of the [SW] do not permit certain actions or because the character is not meant to act in

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a given way.  However, possibility C can be a potentiality which is not

fully materialized because of the limitations that have been put forth in

the configuration process.  In this case, the initial parameterization and

assumptions must be altered that will allow certain actions to be made

in the desired direction.  What distinguishes possibility C from possibilities

B & D is that the alterations in the [SW] configuration are minor, whether

major revisions are needed for options B & D.  By altering the

parameterization to accommodate possibilities B & D, the [CSS] will

undergo an informational turbulence that might result the story to

change significantly and a new stage of development may be

needed to address the newly-arisen issues.  Which set of actions will be

preferred depends on which possibility produces the desired dramatic

effect based on a variety of factors, i.e. budget, casting, screenplay

development budget, locations, subjective preferences, genre, ability

to deliver, the author's individual skills, etc.


A combination of tools such as the *plotting schema* and the *historical*

*path*, create the necessary informational framework that supports the

decisions of the authors.  Chatman has raised a few concerns to the

effort of structuralists, especially to Todorov, Propp and Bremond, as to

how a universal grammar of action, that could be applied to all stories,

can be created:

> "But to transfer Propp's and Todorov's method to
> any narrative macrostructure whatsoever is
> questionable.  Most do not have the necessary

overarching recurrences. The worlds of modern fiction and cinema are not two-valued, black and white, as are the Russian fairy tales and the *Decameron*... I do not mean that Formalist-Structuralist theories of marcostructural analysis are not valuable and should not be pursued whenever applicable. I only mean that they must not form Procrustean beds that individual narratives cannot sleep in." (Chatman, 1980, pp. 92-93)

Such an approach described above by Chatman is Todorov's reductionist algebraic formalization (Todorov, 1977, p. 218-233). The structuralists did not approach the problem at hand from the correct angle and dealt with it rather superficially, creating 'essential' life situations, which they used to extrapolate their conclusions:

"Some French structuralists, like Claude Bremond, have gone far beyond Propp and Todorov to argue the applicability of taxonomic method to all narratives; they maintain that there exist sets of general categories into which every action whatsoever may be placed. In this view, any narrative can ultimately be analyzed as an assemblage of a dozen or so constant micronarrative elements." (Chatman, 1980, p. 93)

Propp, Todorov and Bremond attempted to apply their analyses to a variety of stories believing that modern day narrative, and thus cinema, can be explained by the application of observations deriving from Russian folktales, over-simplifying a process which so far I have shown how complex it can be. Under this light, a universal grammar of action is not possible. However, there may be some merit in the six elements of action Rescher (1996, pp. 138-140) identified in his philosophical analysis of action: first, a conscious *agent*, who can be an individual or

a group acting together or separately, second, his *intention* in acting, expressing a desire for the attainment of a goal. The third element is the *actual act*, which can be a core or a trivial action, while the fourth is the *manner and means* of action. The fifth element is the *temporal and spatial setting,* which refer to the [SW] and its boundaries at large, the immediate dramatic environment enshrouding the characters. Lastly, the sixth element is the *motive* behind the action, referring to the psychological capacity of the character to achieve a goal, a causal or motivational explanation.

The above six elements describe the process a fictional character acts, however, Rescher's elements of action do not incorporate the psychological motive, or need, which causes a character to act in a certain way. The same character could be seen acting differently if the [SW] is altered or replaced. Thus, the importance of the [SW] on how certain elements operate within its boundaries is hereby certified by introducing a seventh element of action - the motivational capacity of the characters. When causality is matched, or coupled, with the characters' psychological dimensions of having a goal, a need, and a desire to attain it, which gratifies the characters, a forward momentum is produced in the story. Actions carried out by conscious agents are forces that carry information, i.e. who, what, how, when, where, why. Also, actions usually have a purpose and are aimed at another character in order to create a causal result that will generate meaning.

Using semantic representation, figures [4.12] and [4.13] show how purposeful actions carry information.
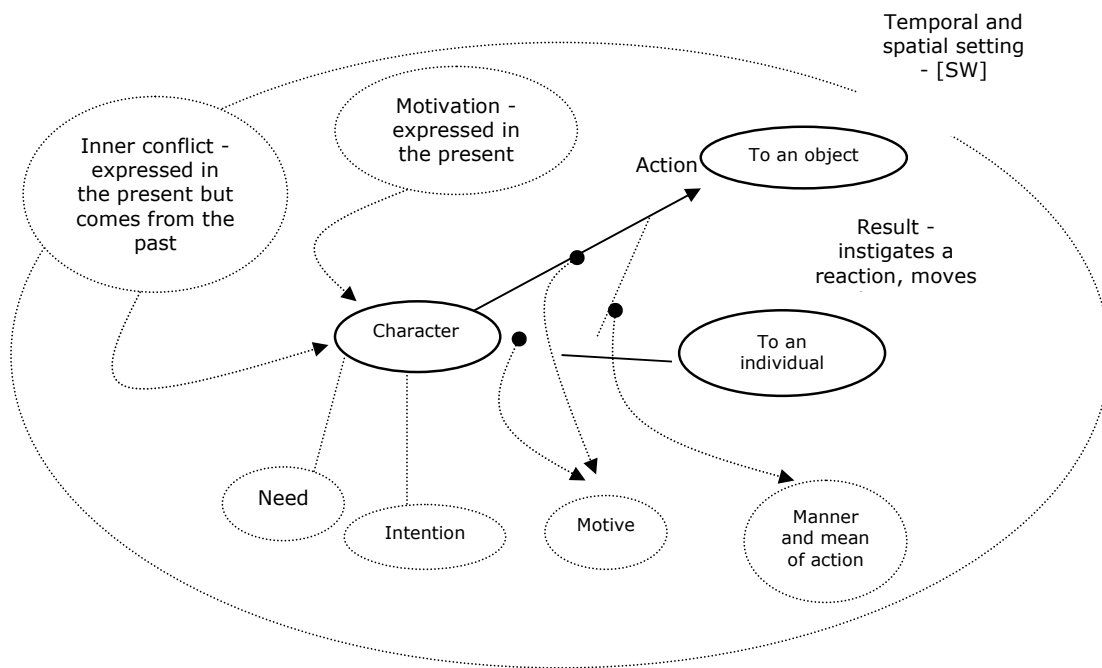


Figure [4.12] - Semantic representation of an action as a force that carries information
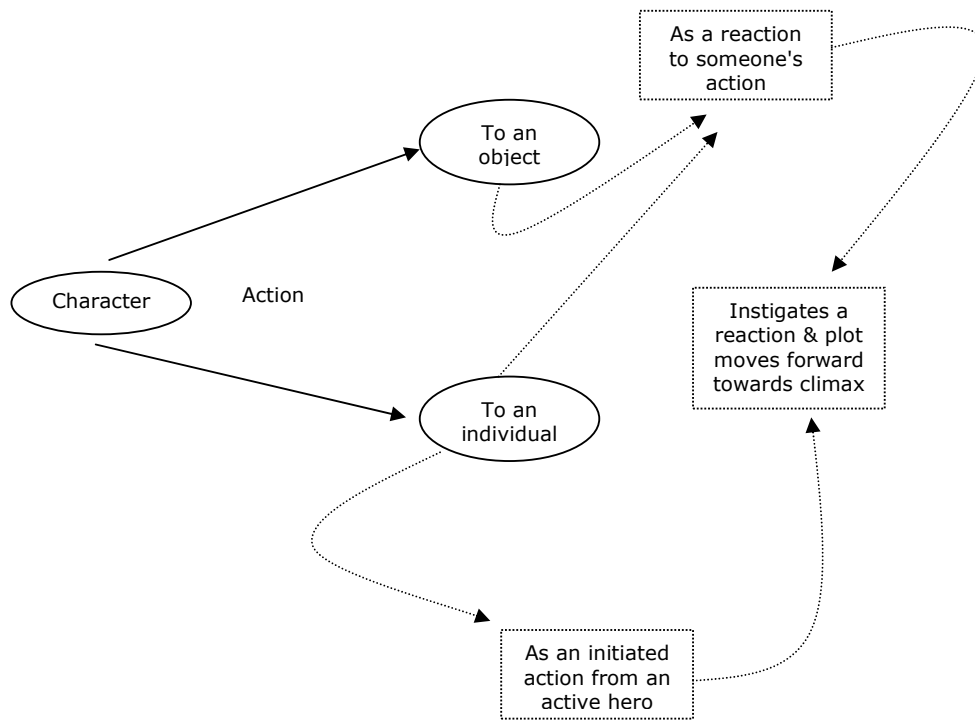
Figure [4.13] - Semantic representation of an action as force that is purposeful

Yet in the Aristotelian perspective, action comes first, and the characters who perform the actions come second since they are not regarded as essential parts of the story, or its mechanisms. However under the unifying umbrella of a [CSS], character and action share the same importance. Action happens because of who the character is and the character acts based on the characterization that defines her as a conscious dramatic agent. Thus, a character not only receives and processes information but also generates and conveys information which influences other characters. This grouping of components and information has only one purpose: to produce new information that is relative to the sources, i.e. the characters. This is an essential part of

narrative since this bidirectional association links together characters with plot moments, or events, that could appear initially to be loosely connected or even disconnected, creating this way an emotional framework which the audiences find satisfying. Although causality often facilitates a smoother progression of the story towards its resolution, causal relations between events are not always necessary.

We can adapt the plotting schema in order to create the action schema by incorporating Rescher's elements of action into it, the clustering of information that supports the authors' decision as shown in figure [4.14].
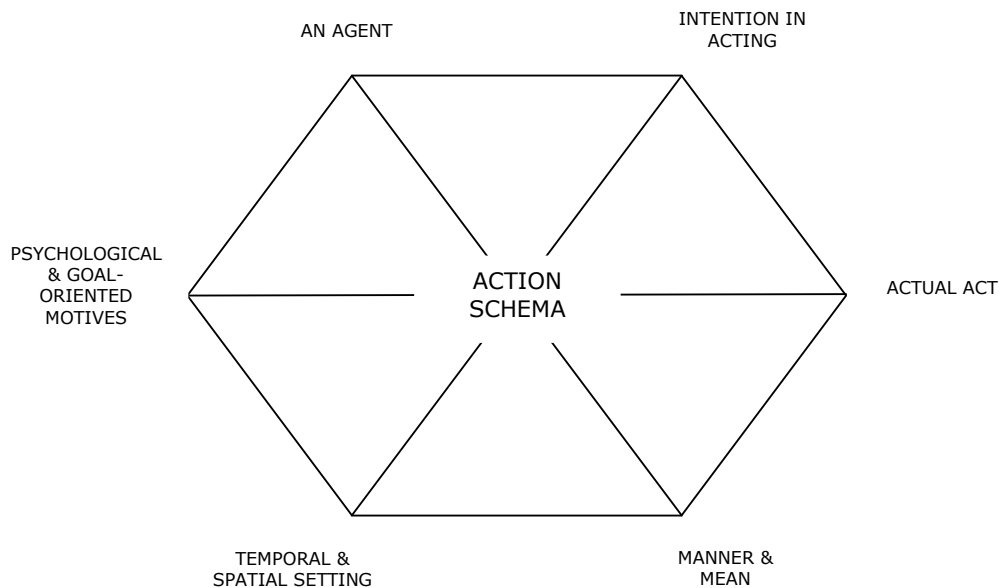


Figure [4.14] - The six elements of the action schema

### 4.3.5.2.1    Functions and events

The functional relationships between the characters can be categorized according to the degree of their mutual dependence. According to Propp, a  function is defined as 'an act of character seen from the significance of its contribution to the course of the overall plot' (Propp, 1968, p. 21).  However, Propp puts the emphasis on *what* the character does, which should precede 'who does it and how it is done' (Propp, 1968, p. 28).   In *Screenplectics* the emphasis shifts equally between *who* does *what* and *how* since each aspect is a direct derivative of the other.   By putting the emphasis on *what* is done, and how this contributes to the plot, Propp seems to be neglecting the importance of character, siding with the Aristotelian notion of character being subordinate to the plot, and thus, elevating standalone events to the cornerstones of story-telling.   Having similar events in different parts of the story fulfilling different functions, i.e. a son receives money from his father for two different reasons and occasions, (Rimmon-Kenan,  1983, pp. 20-21; Propp, 1968, p.21) seems a rather stripped approach for the production of stories.   It implies that the author should start generating the contents of the [SW] deriving story and plot from single events and functions, and not holistically in order to create original premises.

According to Chatman, events are either *actions* or *happenings*, which can both be regarded as 'changes of state' (Chatman, 1980, p. 44). *Actions* are carried by an agent and usually affect another one, and is a distinction of whether someone did something. On the other hand, *happenings* are changes of state which simply happened out of luck or probability of happenstance, for example a natural disaster. In a story the possible events can be infinite and can be categorized into *core* and *trivial* ones. With aspect to this, Chatman notes that:

> "...there is a virtually infinite continuum of imaginable details between the incidents, which will not ordinarily be expressed, but which could be. The author selects those events he feels are sufficient to elicit the necessary sense of continuum." (Chatman, 1980, p. 30)

*Core events* have a logical connection and advance the plot, generating new information or conveying information to the audience. If removed, the overall story, and narrative, collapses. This happens because *core events* are usually associated with the hero's *goal-path*, an accumulation of important events, actions or re-actions on behalf of the hero, that constitutes the structural spine of the story from the set-up to its resolution. A goal-path consists of three elements: a non-action, or story alternative, an attempt, which could be unsuccessful or successful, and the outcome. In the event of an unsuccessful attempt, the hero will try again until the desired effect is achieved. As Chatman notes, 'kernels [core events] cannot be deleted without destroying the narrative logic' (Chatman, 19080, p. 53). Events can be seen as

branching points in the structure as they create possible paths in the story. A character may or may not act, or re-act, to a specific action or happening, creating this way alternative directions for the unfolding of the plot. The branching of events and the creation of the hero's goal-path are shown in figure [4.15].
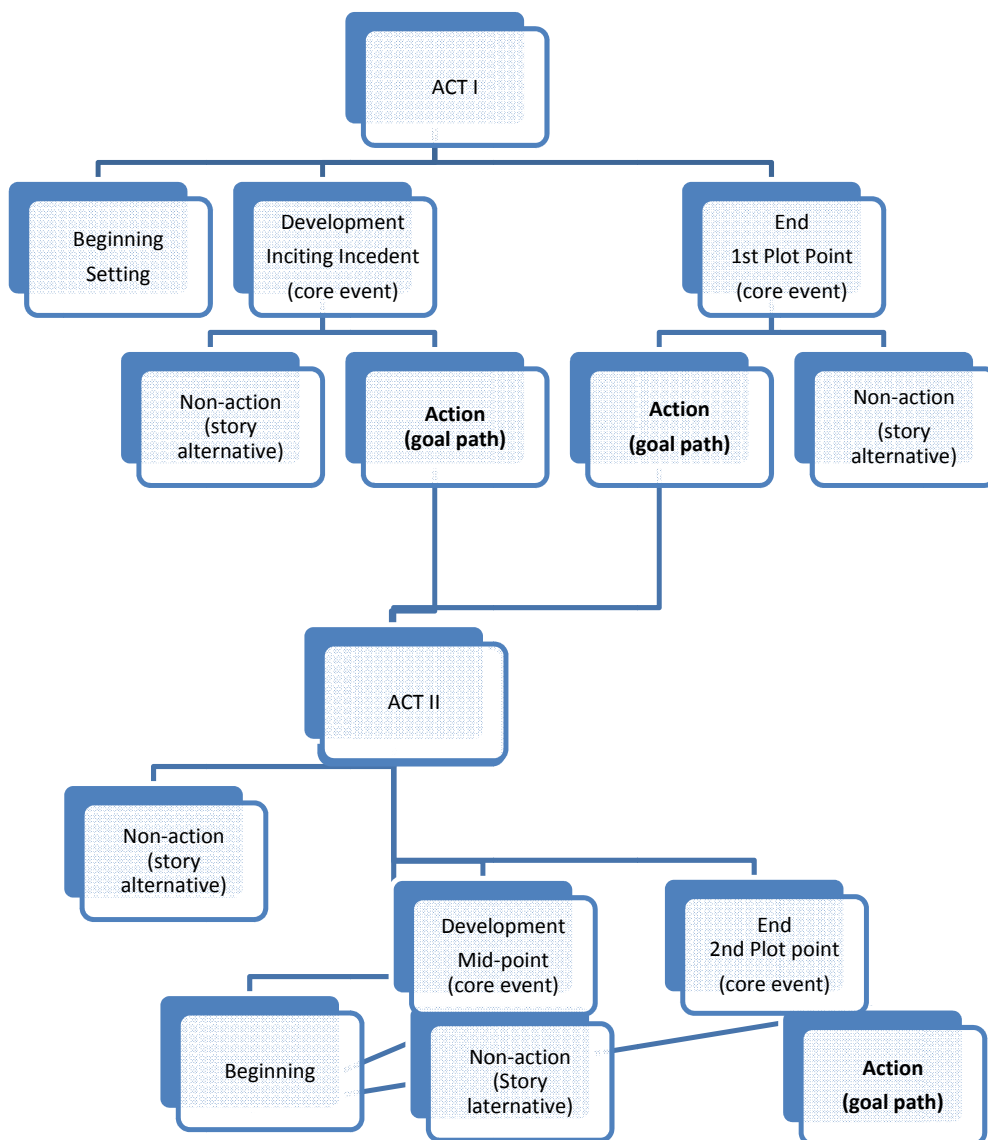


Figure [4.15] - Core events and the goal-path

On the other hand, *trivial events*, if removed, do not affect the narrative logic neither create informational disturbance in its structure. *Trivial events* are used by the authors in order to add dimensionality and realism into a story, elaborate an aesthetic dimension, reveal character, etc.

### 4.3.5.2.2    Actions, functions and causality

The emergence of causality in a [CSS] is based on inferences drawn from the story-world's unique parameterization and the interactions it creates between the characters, the rest of the elements and their functions.   The [SW] interactions are of great importance to the production of meanings, causal actions and overall dramatic conflict. In defence of the holistic perspective of *Screenplectics*,  Egri argues:

> "If we try to isolate and examine conflict as an independent phenomenon, we are in danger of being led up a blind alley. There is nothing in existence which is out of touch with its surroundings or the social order in which it exists.  Nothing lives for its own sake; everything is supplementary to every other thing." (Egri, 1960, p. 132)

In relation to this, Simons observes that:

> "...causality is... not an independently existing relation between objects and events, but, in the real world as in narratives, an inference made by an observer." (Simons, 2008, p. 122)

Causality is relevant to the importance humans give to their interactions with the physical world and the meaning they derive from it.  Similarly, the same happens in a fictional world where psychological motives, goals, intentions and needs link together characters in pursuit of their own agendas or dreams.  The meaning deriving from such interactions, in hindsight, is a justification of the characters' actions from the audience.  As Currie notes:

> "Interaction suggests causation, a notion which has
> been claimed to be central to narrative content."
> (Currie, 2010, p. 27)

Clustering relative information around characters and structural points, a deterministic framework of logical consistency is created where the past actions of the characters define their future ones.  Causality of the later actions and happenings are rooted in the early stages of the development of a screenplay.  Intentions are forces of fundamental importance for the establishment of actions as Searle argues:

> "...there are lots of states of affairs which are not
> believed to obtain or desired to obtain there are no
> actions without intentions.  Even where there is an
> unintentional action such as Oedipus's marrying his
> mother, that is only because there is an identical
> event which is an action he performed
> intentionally, namely, marrying Jocasta." (Searle,
> 1983, p. 82)

Thus, actions always take place within a systemic framework and they do not happen in isolation, or as Egri puts it, 'action is not more important than the contributing factors which give rise to it' (Egri, 1960,

p.126).  This does not rule out the element of chance though.  As I explained in [4.3.5.2.1], events could be just mere happenings, i.e. a natural disaster, which can occur out of sheer chance.  Such events do not need previous logical justification in order to gain a plausible or objective status nor they can be regarded as causal instances.

Additionally, causality narrows down the forking path possibilities at the structural nodes.  The *forking path* concept used here is different from the one Bordwell (2002) uses in *Film Futures*, where he examines the alternative possibilities, or realties, in films retrospectively and from the perspective of the audience.  Bordwell discusses *Sliding Doors* and *Run Lola Run*, films which employ alternative realities in their narratives, and which he parallels with the concept of "parallel universes" of quantum physics.  The forking path possibilities I'm referring to herewith always occur in the composition stage of a screenplay and present '*what if*' alternatives for the progression of the story.  This way logical problems of justification and plausibility are overcome and the story is steered to the desired direction and to its eventual resolution.  Such forking path possibilities are only signposted in the mind of the writer and are never presented to the audience, apart from the final solution, as they pose immaterialized, or hypothetical, options.

The heterogeneity in a story-world plays an important part to the creation of the causal relationships since causality emerges from the

interaction of the story components, with the meanings being created

from such interactions. In relation to this, Ricoeur states that:

> "By 'emplotting' a heterogeneous collection of units [story components] such as events, characters, intentions, goals, means, interactions, etc., a narrative 'configures' what would otherwise be a simple succession of events into a 'meaningful' whole." (Ricoeur, 1985, p. 105)

Action begets reaction begets action, moving the story forward, and

'each step has effect which in turn becomes a cause itself' (Bordwell *et al.*, 1988, p. 17). Action and reaction are the two perspectives, or

functions, of a single role: for the story to progress towards its climax

and resolution. From one perspective, action can be seen as the

active end process of a character's mobilization to achieve his goal,

while from the other perspective, the same action can be seen as

another character's passive reception to it. This exchange, physical or

informational, creates a necessity to the receiving party: to react. This

way a mechanism for the story's forward progression is created which is

pictured in figure [4.16].

Character (A)
affects

for the
attainment of a
goal or posing
as an obstacle

decides to act

an action is
carried out    =    Character (B)
is affected

action
functions as
a cause

for the
attainment of a
goal or posing
as an obstacle

decides to re-act

action
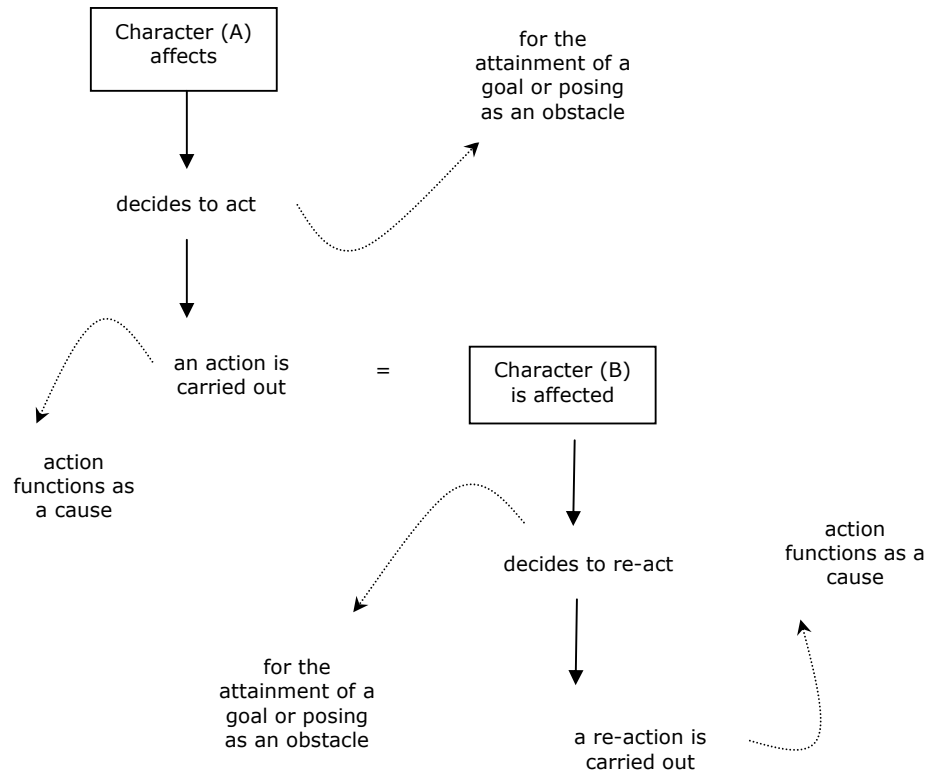functions as a
cause

a re-action is
carried out

Figure [4.16] - The mechanism for the story's forward progression (Bremond, 1980, p. 388)

Like every system, [CSS] have an inherent built-in logical basis of cause-and-effect justification, which is referred to as the *principle of causality*:

> "...every effect is preceded, not followed, by a cause, which in turn produces a measurable effect in the system's next structural cardinal node." (Skyttner, 1996, p. 9)

The sequence of action begets reaction begets action resembles 'a fast paced autocatalytic reaction which serves the pace of the plot' (Marion, 1999, p. 124), as rapid forward movements happen in bursts of activity like continuously shifting the balance from dramatic lows to

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dramatic highs.  In order to achieve this, however, tight causality is needed so 'to eliminate unjustified coincidence and loosely linked events from the plot, guaranteeing in a way the story's continuity' (Bordwell et al., 1988, p. 18).  Referencing justification and logical consistency, Lewis Helmar Herman explains that:

> "Care must be taken that every hole is plugged; that every loose string is tied together; that every entrance and exit is fully motivated, and that they are not made for some obviously contrived reason; that every coincidence is sufficiently motivated to make it credible; that there is no conflict between what has gone on before, what is going on currently, and what will happen in the future; that there is complete consistency between present dialogue and past action - that no baffling question marks are left over at the end of the picture to detract from the audience's appreciation of it."
> (Herman, 1974, p. 88)

This cause-and-effect interaction justifies the structural arrangement of events along the *state-space*, spatially, temporally or both.  Fernando Ferrara in the *Theory and Model of the Structural Analysis of Fiction* argues that the criterion of cause-and-effect is a justification of the story's coherence since in all fiction:

> "...the relation of time is only the narrative codification of that fundamental relation of conventional logic which is the cause-effect relation." (Ferrara, 1974, p. 258)

However, Wittgenstein argues that in reality there is no actual 'passage of time' (Wittgenstein, 1996, p. 179), the forward and temporal

progression of the story is based on subsequent processes, or actions, with its causes to be rooted in the historic past of the story-world.

### 4.3.5.2.3    Functions:  goals, motives, needs and conflicts

The goal orientation of the characters must be regarded as one of the fundamental components for the construction of a well-rounded story. Usually the characters' need to achieve something that gives them a goal and an ending destination or end purpose, which eventually becomes 'the main action of the story' (Field, 1984a, p. 24).   The characters are called to overcome any obstacles preventing them to attain their goals.  The struggle to attain a goal generates dramatic conflict, 'the cornerstone of drama' (Field, 1984b, p. 56).   The protagonist's and the antagonist's goals must be relative and conflicting in nature for conflict to emerge.  One of the main functions of having characters with goals is the elimination of chance and coincidence.  Giving characters a goal also streamlines the unfolding of events, preventing authors to resort to unnecessary dialogue and action 'which diverts him even further from the basic premise of his story' (Egri, 1960, p. 7).

With only elicitation of emotion to compensate for the absence of goal-orientation and conflict the audience will never know what are these forces which 'set emotion going' (Egri, 1960, p. 7).  Playwright

theorist Moses Louis Malevinsky (1925) argues that by abiding to his basic principle of adding different emotions in a story the problem of storytelling is solved.   But Egri provides further argument to that by adding that 'it [emotion] may revolve around itself, destroying, building - and getting nowhere' (Egri, 1960, p. 7).

Goal orientation and dramatic conflict add forward and definite temporal progression to a story's plot, a dimension which differentiates fictional narrative from poetry, experimental, or abstract forms of narrative.  Even in purely character-driven stories, such as *The Reader*, the action-driven relevant goal-orientation has substituted by the characters' inner psychological desire of becoming a better person or ameliorate the sheriff's relationship with his son, respectively.   The characters want to attain their inner goals or desires by the end of the story, i.e. satisfy their psychological or emotional needs, as opposed to plot-driven stories where the characters struggle to achieve their external, tangible, goals.   Following the arguments presented in chapter 3, it is possible for a character to achieve both an internal and external goal, a feature that balances between the two distinct categories of filmmaking, i.e. plot-driven and character-driven genres. Stories as the recent *Dark Knight* trilogy manage to balance these elements successfully, providing the basis for a heightened audience experience.

To understand the characters' actions the motive behind these actions must be taken into consideration. Motivation in a [CSS], however, works best in the present time, as this is the temporal window within which the audience is introduced to the protagonist. Motives and goals provide an answer as to why characters act and react, offering a basis for a cause-and-effect justification. A direct correlation, and justification, between what is happening on the screen in the present and the characters' past is needed for motivation to function appropriately. If the characters derive their motivation from events that happened in the distant past the audience might wonder why they are acting now and have not acted earlier. Drawing conclusions as to how to act in the present yields superior results from *anamneses*. *Anamneses* include 'the testing of past properties and the proof that nothing has interfered with the situation in the meantime' (Lewin, 1959, p. 49). In *Kill Bill Vol. 1 & 2*, the Bride, the character played by Uma Therman, sets out to take revenge against those who wronged her only after she recovers from the coma she has fallen into. This narrative trick provides a plausible justification why considerable time has elapsed before the protagonist taking action. Similar tricks are employed in *Old Boy*, where the character is imprisoned for 15 years, and in *The Count of Monte Cristo*. In contrast, in the *Gladiator* and *Unforgiven* the heroes seek revenge in the present with no considerable time elapsing between the wrongful actions and their decision to act.

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For the opposite reason, inner conflicts work best when they are acquired in the past, distant or not. Inner conflicts usually hinder the heroes' ability to act, a condition which must be overcome and resolved before the end of the story, usually referred to as the characters' arc. If an inner conflict is acquired in the present then there will not be enough screen time to show why the characters suffer from such a hindering psychological condition.

The force that is needed to make the [CSS] transition from a given state A to a state B must be bigger from the forces that wish to keep the screenplay system unchanged. John McCLane's desire to save his wife who is held hostage by a group of terrorists in *Die Hard* carries a larger emotional weight from Hans Gruber's desire, the antagonist, to steal hundreds of millions of dollars in bearer bonds. Each conflicting situation creates a new one, another manifestation of a cause-and-effect dynamic, as Egri explains:

> "Two determined, uncompromising forces in combat will create a virile rising conflict. Through conflict, characters will reveal themselves, assume dramatic value, suspense, and all the other attributes which theatrical jargon terms 'dramatic'. "
> (Egri, 1960, p. 165)

The parameterization of the goal component must be tightly connected with the story's overall premise and be intrinsically tied in with the antagonist's agenda. The psychological states of the characters in the micro level must be aligned between them but

maintain an oppositional dimension.  Interesting results emerge when characters seem to be operating from a 'self-interest platform rather than being altruistic' (Miller and Page, 2007, pp. 95-96).  A possessive interest by the antagonist in maintaining what has been achieved so far produces interesting levels of dramatic conflict.

## 4.4        The interactions of components in a [CSS]

The significance of each component and their contribution in a [CSS], without differentiating plot from character and the rest of the structural limitations, was argued in chapter 3.  Thus the removal of a component results in reduced functionality of the whole screenplay system.  For example, if no inner conflict is incorporated in the characterisation the character might appear weak in dimensionality.  The same might occur when a *theme* is not added into the story, with subplots exploring and expanding it in a variety of ways.  Without such additions, the story will still be a functional whole but its overall depth might not be enticing enough, or could end up being monotonous and colourless.

*Genre films* are examples of motion pictures that have subverted certain components, i.e. characters, their psychological needs, and in-depth characterization, for the benefit of the overall action-driven plot. Notwithstanding this, Aristotle's observation is an exceptional tool which could help authors identify which components do not contribute

information that serves the plot thus can be regarded as superfluous. For example, the talking part of a gardener, who adds no complications to the plot, or does not reveal information that is paid off later, can be removed, streamlining the screenplay's pace. Aristotle's observation also implies that there is a tight interconnection and interrelation between the components without which the screenplay's overall efficiency would suffer. It also highlights the significance of a [CSS]'s inner logic and its adherence to the historical path of the *state space*. Aristotle also made an observation regarding a system's complexity which arises from its structure 'out of necessity or in accordance of probability' (Aristotle, 1996, p. 18). A character's actions and reactions to events must be justified by other characters' actions, doings, responses and sayings. Although some creative decisions of the authors are intentional, others could be products of happenstance or determinism stemming from the story's historical path. Notwithstanding this, without the necessary justification of the characters' actions the inner logic of the screenplay could suffer, and with this the audience's suspension of disbelief can crumble. A tight interconnection, instigated by the characters' motivations, to the underlying causality of events can also be inferred. In a practical example of the thriller genre, if John, the fictional protagonist, is arrested in ACT I, this event must have a tight connection with the antagonist's goal or overall agenda. The end result must be John's incarceration or his implication to a murder he did not commit in order

for the antagonist's plan to be implemented unperturbed.  If John's arrest has no overall connection to the motivation of any other character, or does not derive from the story's past states, the subsequent sequence of events will also appear to be disconnected from the overall plot.  Additionally, John's incarceration might appear to be coincidental, drawing the audience out of the story, unless it is explained or justified later in the narrative.

Dynamic interactions refer to a notion of continuous movement with all the dramatic components responding to it, and on a parallel level influenced by it, allowing the creation of an action-reaction thrust that brings change and forward progression in a [CSS].  This shows that all the components are in constant flux with their [SW] environment and that complexity in stories arises from single interactions between tightly interconnected components.  Even if the behaviour of individuals in the micro-level are analysed and formalised probabilistically, there may still be problems in the understanding of the implications of their actions on the macro-level. In other words, it seems that the complexity of real world interactions between humans transcends to their fictional story-world counterparts.

Thus, components acting individually will not produce anything meaningful dramatically.  A set up involving a character living alone in a room and who cites random events from her past could be an

interesting stage-play that appeals to a specific audience, but lacks almost all of the ingredients of an interesting cinematic story: goal-orientation, causality of actions and events, psychological motivation for the attainment of a goal, and dramatic conflict due to the absence of obstacles. By entangling all the above ingredients into a plot assisted by a well defined [SW], interesting set-ups share higher chances to arise, and the tighter the interconnection of the components is, the tighter the story's inner logic will be in return.

Therefore, it is the interrelations and synergetic interactions of the components that add meaning to the whole. Thus, an important aspect that needs further investigation is *coupling* which defines the strength of the relations between the components, or the 'extent to which behaviours in one unit [system] affect those in another' (Marion, 1999, p. 159). If the goal here was the quantification of the interactions a character has in a given screenplay, counting the links this character has with others could have been a valid starting point. Nevertheless, this quantification is meaningless as it does not contribute to our understanding for the emergence of stories, neither serves as a favourable argument in support of the notion that the more interconnections a character has the more exciting her story will be.

The important aspect is the dramatic meaning which derives from such interconnections, its quality, i.e. emotions, conflicts, causality, goal-

orientation, and the strength with which these interconnections are bound to the story's inner logic. An additional functionality can be added to the a*ttractors*, the structural tool that groups similar or relevant information. Since relevant information is grouped together for the advancement of the plot, the attractors have the capacity to control change from cascading damage, preventing changes from spreading uncontrollably to other parts of the screenplay, allowing the whole to retain its structural integrity throughout. An example is the functionality of plot points which bring a localised structural change in the state of affairs of the characters. The state of affairs is affected in its entirety, however, the change is only evident locally, structurally represented by the plot point, and spatio-temporally represented by the characters' actions in each of the structural nodes.

The *coupling* between the components in a [CSS] can be seen in figure [4.17], where the four squares represent a group of individuals grouped together under a common theme or goal. The dashed lines represent a loose *coupling*, such as an indirect relationship, and the thick lines a tight coupling, or direct relationships. Bi-directional arrows represent a situation which can be categorized as a relationship that mutually affects a set of characters, a change in the affairs of the group, or an action which instigates a reaction. Mono-directional arrows represent an action that is not followed by a reaction, or change in the state of affairs of a group or a single individual.
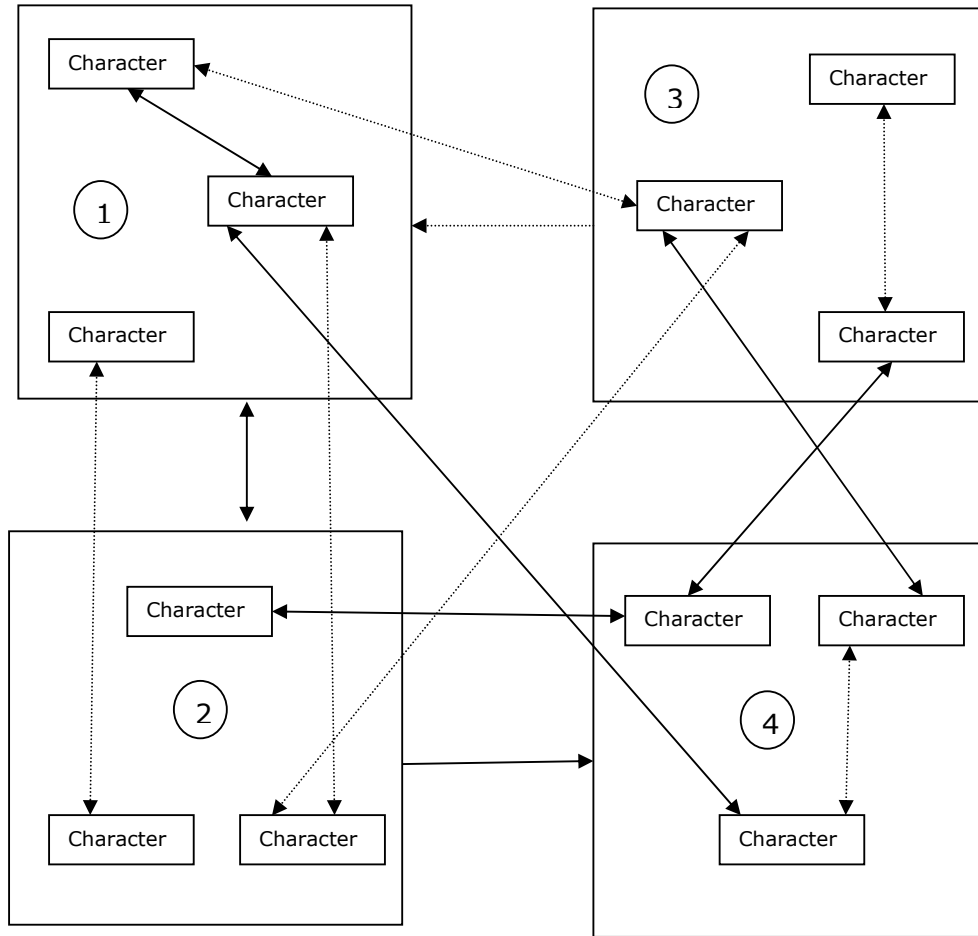
Figure [4.17] - Coupling of dramatic components

If the structural coupling was looser from that of the extended three-act paradigm, which implies that the attractors will be isolated and the relations between the components weak, the pace of the story could suffer. If the structural coupling was tighter, the pace would be frenetic, depriving the audience of the chance to digest what is happening on screen in terms of information exposition, in a manifestation of never-ending action. Thus, the moderate structural

coupling of the extended three-act paradigm brings about a sense of integrity to the whole, allowing enough screen time to convey dramatic information to the audience, build up the necessary subplots, explore themes, introduce action, conflicts and characters. In a moderately coupled [CSS], the change, either structural, informational, or emotional, spreads throughout the system in a controlled fashion, where highs in the plot 'are strategically replaced by lows and vice versa' (Marion, 1999, pp. 157-158).

However, it is only natural to say that different genres abide to different structural coupling arrangements. An action thriller needs to have a faster pace than a romantic comedy, whereas a suspense thriller needs to have more plot twists from an adventure or fantasy film. In films where genres overlap, i.e. action thriller, action sci-fi thriller or sci-fi thriller, the conventions for structure are a hybrid of arrangement. For example, an action thriller will incorporate a faster pace and enough twists and back-story revelations. The aim of the structural coupling of the components is to position the [CSS] in the appropriate level that will allow enough new information to blend in, which will in turn allow change to take place in a controlled manner. Since the constancy of the structural arrangements in a [CSS] is assumed, the change, and the degree of change that is relative to the level of the structural coupling, 'dictates how fluid the system can be' (Lewin, 1997, p. 178). The coupling function is usually encountered in the action and plotting

schemas, and in the advancing of the plot through bifurcation paths. This happens because by grouping relative information together informational clusters are created making explicit the connections between the structural arrangements and the [SW] configuration, anywhere along the *state space*.

Any optimization of the [SW] parameterization must take place in the early composition stages so to maximize the dramatic effect: characters must fit into the premise and the premise must be used as a vehicle for the characters; the characters' psychological needs must be matching and were possible opposing.   This does not differentiate from human society at large as 'different people have different goals which are pursued separately' (Minsky, 2006, p. 26).  The characters in a [CSS] become closely coupled to one another resulting in their interactions to become highly nonlinear.  It will not be easy to remove a character with an implemented function without causing the whole construct to crumble.   For example, if the character who betrays McClane's identity to Hans Gruber in *Die Hard* was removed, another way would have had to be found in order to raise the stakes and the film to maintain its thrilling atmosphere.  This, in turn, results the [CSS] to 'become difficult to decompose, without dismantling it entirely, and complexity ensues' (Miller and Page, 2007, p. 10).

When the conflict starts escalating, the pace of the story must be adjusted accordingly for the equilibrium to be maintained. These adjustments usually occur locally at the structural nodes involved, however, the clustering of relative information can be widespread and take place in different parts of the script. Decisions as to how the story will progress are made at each bifurcation point. What supports these decisions are the original [SW] parameterization, the screenplay's historic path, and its desired future state. This way the system is infused with new information at the forking paths that remains relative to the original parameterization and the so far entanglement of historic information. Even though dramatic conflict is present throughout in a [CSS], its emergence occurs because of the 'stable cooperation between the dramatic components operating under the constraints, boundaries and limitations' (Marion, 1999, p. 51) of the [SW]. In other words, the story is a direct derivative of the components' interactions at one level deeper down.

## 4.5        The interrelations of the components in a [CSS]

Apart from interactions there are also interrelations between the components that can mainly be found in the characters' psychological states of motivation. Characters have multiple dimensions in their characterizations:  goals, flaws, needs, one or more levels of conflicts, motivations, best and worst attributes, attitudes, beliefs and points-of-

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view. In the large scheme of things, interrelations play an important role in how a story is modelled. There is a direct correlation between the characterization of the protagonist and the characterization of the rest of the characters.

Approached from the perspective of complex systems, characters form a 'fabric of relations' based on their parameterization of their psychological capacities without which the characters will not amass to much individually. In a [CSS] it is not the characters themselves who interact, literally speaking, but the opposing or matching parameters of their characterizations that form a network of background relationships. This is in accordance with one of the principles of structuralism: the dramatic components do not have significance themselves but their significance is determined by their relationships with other components. These relationships are juxtaposed against the structural framework of the [CSS] which are integrated to, and 'the structure must always be taken into consideration as a point of reference of the context' (Hawkes, 1977, p. 18).

Distancing *Screenplectics* further from the position of Propp (1986), who put the emphasis on the thirty-six functions of character in his studies of the Russian folktales, the focus is hereby put on the actual roles the characters have to perform. This is because 'characters can play a number of roles and different characters can play the same role'

(Herman, 2002, p. 11).  Stories are not created by having as a starting point the Proppian functions of the characters, an approach which can be very limiting, but whether the characters' role and characterization serve the premise and vice versa.  Typically, deciding what the protagonist's role is going to be also dictates the role of the antagonist as 'everything has to be linked and remain relative throughout' (Parker, 2006, p. 26).  It is pointless to put the archetype function of the Superman character in a slapstick comedy, unless a parody of sorts is the ultimate reason, since under this arrangement character and premise will not be facilitating each other.  As Philip Parker argues:

> "...the problem with all these approaches is they attempt to separate one or more elements from the work [characters, structure, etc.] and make them central to creating a good screenplay.  This may clarify some aspects of the process but it also fundamentally ignores the simple point that we do not watch the screenwork in parts.  We experience it as a whole and the screenwriter has to create it as a whole.  Therefore, we need to have a means of working and understanding the screenwork as a whole." (Parker, 2006, p. 12)

Building on this need, Parker created *the creative matrix*, a concept which interrelates various elements in a screenplay by distinguishing them in three pairs: i) story and theme, ii) form and plot, and iii) genre and style.  The *creative matrix* is shown in figure [4.18].
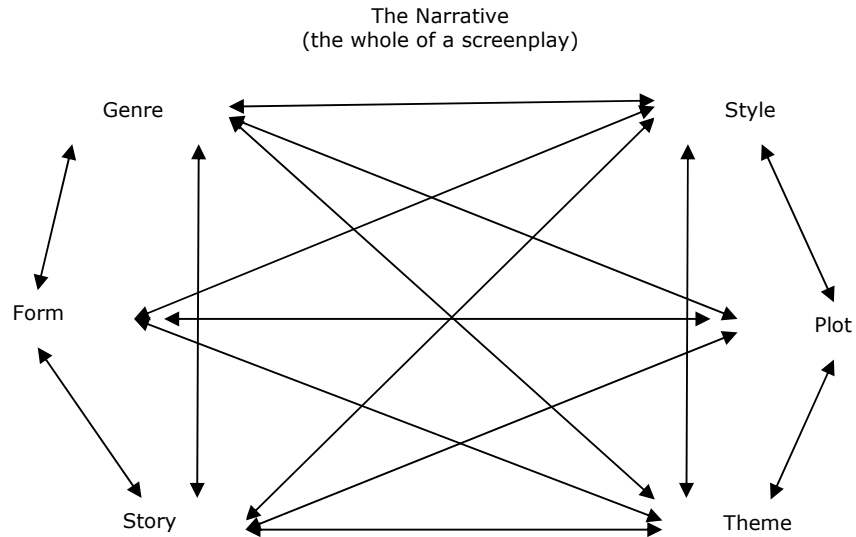
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The Narrative
(the whole of a screenplay)



Figure [4.18] - Interrelations of abstract screenwriting elements (Parker, 2006, p. 13)

However, Parker in his analysis included only abstract elements of the screenplay, primarily the ones which are related to structural orientation, like form and plot, and with regularities encountered in various genres. Under *Screenplectics*, the characters and their psychological capacities are also integrated ito this framework as shown in figure [4.19].

The Narrative
(the whole of a screenplay)

Genre          Style

Form          Characters &
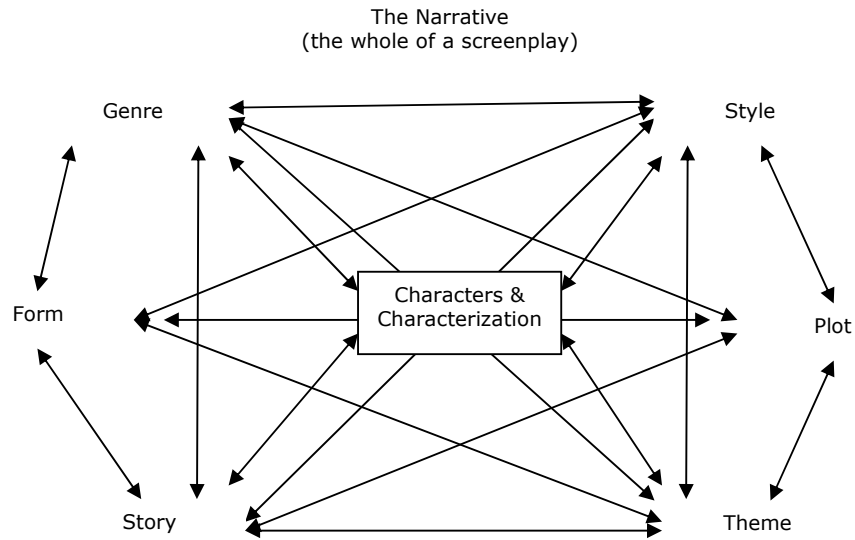              Characterization          Plot

Story          Theme

Figure [4.19] - Interrelations of screenwriting elements

If characters are not juxtaposed in a story set-up in which they are set to achieve a tangible goal they will appear as narrative presences and not dramatic personae, or as Parker notes: 'without the characters actually doing something, there is no drama, therefore, no screenplay' (Parker, 2006, p. 16). Egri puts it in context with the following remark:

> "In a well constructed play or story, it is impossible to denote just where the premise ends and story or character begins." (Egri, 1960, p. 29)

Never two characters think and act alike, even if the same character is created by two different authors. Thus, different characterization will affect the plot in a specific manner, and in turn the character will be affected by the counter-attacking events in a different way. In other words, the relations between the elements and 'the logical procedures

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by which the whole is formed' (Piaget, 1968, p. 9) is of essence here. The pre-Socratic philosophers, investigated the motivation of signs, and 'whether there is an inherent relationship between the words and the objects they describe' (Stam *et. al*, 1992, p. 2). The conceptual and differential relationships between the components are dictated by the propositions of the story-world in question and the part of its configuration that makes up the characterizations of the dramatic personae. Concepts, meanings and therefore stories, emerge out of the differential relationships of the narrative components, and the function or content they attribute to the story. The relationships between the components are non-linear and dynamic, and their narrative content does not necessarily have to be defined exactly. This points to the fact that 'there are more possibilities than can be actualised' (Luhman, 1985, p. 25) in a [CSS] and the meanings produced from the interaction and interrelation of the components are actualised only potentially. The meanings are realized according to a specific situation where the components interact differentially and relatively to specific dramatic information.

Thus the self-containment of dramatic information is an important aspect of [CSS] since in a specific situation the components interact and interrelate with a view to produce a specific dramatic outcome and advance the story further. The new information that is produced from this interaction will be used in subsequent parts of the screenplay;

at each cardinal juncture, the current state of affairs concludes and another one commences down the *state-space* of the [CSS].

## 4.6          Three levels of structure

The interrelations and interactions of the narrative components operate over many levels.   From the deep structures of universally identified themes and storylines to the surface structure of the written screenplay and the physical arrangement of the text.   As Rimmon-Kenan remarks:

> "...a complete model should also include the transformations leading from the former (deep structure) to the latter (surface structure)." (Rimmon-Kenan, 1983, p. 27)

Even though the generative nature of *Screenplectics* is discussed later in the chapter, a preliminary clarification is needed here in order to emphasize the importance of the transformational method and the role the components have on the transitions from the deep to the surface structure.   Thus, three different levels of structure can be identified, which is an elaboration of Ferrara's observations in *Theory and Model for the Structural Analysis of Fiction* (Ferrara, 1974, p. 247):

  i.   The deep, or abstract level, is where all the universally identified themes, goals, needs, and desires of the dramatic personae are contained in the form of core narrative components.   This solves

the problem of a psychological approach to narrative, as it has been described by Branigan:

> "...[that] would give equal weight to 'top-down' frames of reference for grouping elements, that is, to principles and criteria that are not determined solely by local conditions but instead are responsive to larger contexts." (Branigan, 1992, p. 27)

ii. The strategic, syntactic or intermediate level. Most of the narrative interactions occur in this level as the system produces, through the application of the *plot-algorithm*, a given outcome (story alternatives, forking path possibilities, etc.) from a given input of dramatic data in the form of [SW] configuration. The dramatic conflict that is generated in this level is then projected onto the surface structure through a series of action beats, scenes and scene sequences. The intermediate level is considered to be strategic because the underlying interactions, interrelations and interconnections between the components, the dramatic fabric of a [CSS], are facilitated here.

iii. The implementation, semantic or surface level, is the level where the plot-algorithm transforms the forking path or story alternative decisions through the physical arrangement of the text. In other words, this level showcases the product of the procession of the [SW] configuration of the dramatic components through the application of the plot-algorithm. On the surface level the complexity has been reduced, the system has reached a point

of temporary or permanent equilibrium, and the indeterministic nature of infinite story possibilities has been transformed into a deterministic historical path of sets of dramatic events and actions. For reasons of clarity, the terms deep, intermediate, and surface structure will be used throughout.

According to the above categorization, a transformational model must be consisted of the following steps, which should be regarded as the minimum prerequisites:

i. Set-up of the propositions and parameters that define the intended story-world, a process which is referred to as the [SW] configuration.

ii. Calibration of the components' parameterization in order to achieve a basis of strong dramatic context through *coupling*. Character and plot are best to be developed synergistically and not independently or disconnected from one another.

iii. Clustering of the dramatic information according to a common theme, similar idea or context, and implementation of the *plot-algorithm* mechanism, which incorporates the action and plotting schemas. In other words, the plot-algorithm carries, and transforms, the agents' actions based on the parameterization of the [SW] core components and the characterization of their dramatic personae; therefore, it generates action, reaction, and conflict, and brings change to the story through narrative

evolution, leading the story towards its climax and resolution.  It also assists in the mapping of the story alternatives and forking-path options, all the while coupling the narrative components.

iv.    Decisions for the advancement of the story must be based on the narrative logic at hand and the historical path of the [CSS] in question.

v.    Logical checks must be applied to the story's logical form in order to test the screenplay in terms of coherence and consistency.  Such logical tests should be regarded as a form of feedback process, performed either by the authors or by a group of peers.

However, it is evident by now that no hard *transformational rules* exist which need to be applied rigidly for the [CSS] to produce new dramatic information.  Such is the nature of narrative that the implementation of rules and principles, after they have been modelled and adapted to the preference of the authors, is purely subjective. Nevertheless, the parameterization of characters and their psychological capacities are considered to be core components which are universally identified.  Core components have attained an objective *status* and thus are regarded as prerequisites, or function as *base rules*.  All the decisions how to further advance the story are of qualitative nature and they are based on a myriad of factors.  Even so,

for chance and coincidence to be eliminated, decisions must adhere to the screenplay's historical path and inner narrative logic.

### 4.6.1　　　Deep structure: The abstract level

Rimmon-Kenan argues that an important difference between deep and surface structures is that surface structures are immediately observable whereas deep structures can only be retrieved through a backward retracting of the transformational process:

> "Whereas surface structure is the abstract formulation of the organization of the observable sentence, deep structure - with its simpler and more abstract form - lies beneath it and can only be retrieved through a backward retracing of the transformational process." (Rimmon-Kenan, 1983, p. 10)

Rimmon-Kenan further observes that the surface structure of a story is governed by spatio-temporal and causal principles, while the deep structure is consisted of finite static logical relations of the core components:

> "Whereas the surface structure of the story is syntagmatic, i.e. governed by temporal and causal principles, the deep structure is paradigmatic, based on static logical relations among the elements." (Rimmon-Kenan, 1983, p. 10)

Nevertheless, the importance of the surface structure must not be negated since:

> "The one sense in which story-grammar constituents represent a particular level of importance is that the sentence or sentences which express the central meaning of each logical topic unit are considered to be very important to the story."
> (Mandler and Goodman, 1982, p. 509)

Thus, there is a high-hierarchy correlation between narrative components populating the deep structure and their manifestation on the surface structure as key images or concepts are communicated visually or orally through dialogue. I have argued that through the combination of the components' assigned parameters infinite story combinations and alternatives can be created. Thus, this level is populated by universally understood fundamental components such as the conscious agents and the parameterization of their psychological dimensions, and the story's underlying theme, which often relates to 'what the story is really about' or 'the moral lesson learned by the protagonist.' The importance of goal-orientation is emphasized by experiments in cognitive psychology, conducted by Bower *et al.* (1979), that investigated how alternative scenarios (scripts) associated with common activities, such as going to the restaurant or getting up in the morning, were evaluated by undergraduate students. Mandler and Murphy explain that:

> "...a series of experiments showing that scripts play an important role in recognition and recall. On the basis of their findings Bower *et al.* suggested that the underlying structure of script representations is hierarchal in nature and organized around the goals and subgoals involved in the activities that

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the scripts represent."  (Mandler and Murphy, 1983, p. 534)

Experiments on story comprehension showed how people understand and remember stories and the characters in them through the recognition of the characters' goals:

> "Understanding characters in stories and remembering their actions is alleged to use methods and rules similar to those invoked in actual person perception.  We try to understand a character's actions as the manifestation of a plan to achieve some goal or satisfy some motive.  One experiment showed that if the text obscures the goal and plan of the main  character, college students judge it to be incoherent and they recall it poorly... Later experiments showed that the meaning a reader derives from a story depends on the character he identifies with.  After reading a story while identifying with a given character, the reader is more likely to recall thoughts of that character, to describe events from this station point, and to give a sympathetic interpretation to his actions." (Bower, 1978, p. 211)

Through his experiments, Bower concluded that:

> ...we understand and recall a narrative to the extent that we can identify the plan of the hero - what his problem is, what his goal is and how it generates subgoals, what the constraints are on his actions, and how each action is relevant and instrumental to his current subgoal... According to this hypothesis, the goal and motive of a character provides the focus around which the reader recognizes his understanding of that character's actions and assesses their relative importance." (Bower, 1978, p. 215)

Further experiments conducted by another team of cognitive psychologists, Lichtenstein and Brewer (1980), showed that the recall of goal-oriented actions was superior to that of non-goal-directed:

> "The term 'event' covers a wide range of phenomena: planets collide, people bake bread, apples fall, people slip on icy sidewalks, children play. The term can refer to any occurrence or set of occurrences which takes place over some period of time. However the majority of events which people experience every day involve people carrying out goal-directed activities." (Lichtenstein and Brewer, 1980, p. 412)

Furthermore, the importance of goal-orientation, and the placement of the 'goal' component in the deep structure, is solidified by Johnson and Mandler's conclusion:

> "...the 'goal' constituent play[s] a crucial role, both retrospectively and prospectively, in the listener's determination of episodic structure. If more than one character has been introduced, the listener cannot identify the protagonist with certainty until the reaction occurs. Similarly, the coherence of subsequent events will depend on the listener's understanding of what the protagonist wants to happen... The protagonist's goal path may fall and he or she may try again. In this case, the development of the episode is recursive, i.e. a single episode may consist of multiple developments all aimed at achieving a single goal." (Johnson and Mandler, 1980, pp. 62-63)

Johnson and Mandler's each episode concludes with the attainment of a goal and the beginning of another:

> "A protagonist develops a subgoal. In this type of outcome-embedding, the immediate outcome of an attempt to achieve a goal is a failure; as a result the protagonist suspends the main goal temporarily

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in order to pursue a subgoal, which when achieved is expected to lead to the attainment of the goal of the matrix episode. The recursive application of this rule produces a classic story form in which the protagonist develops subgoal after subgoal; when the last subgoal in the series is finally attained, the story 'unwinds' with a series of events which complete each of the previously interrupted episodes." (Johnson and Mandler, 1980, p. 63)

Usually, the protagonist struggles to achieve one main goal but during the course of the story many sub-goals may arise. Usually the structural nodes, i.e. plot points, signify the end of a sub-goal and the beginning of another, all linked to the story's main goal and the hero's goal-path. In *Taken*, Bryan Mills' psychological need (inner goal) is to remain a good father to his daughter after his divorce. In the first act, we see Bryan buying a present for his daughter and it is later made known to us that she wants his permission to travel with her girlfriend to Paris, France. When Mills learns that his daughter has been kidnapped, he flies to Paris in order to save her from her kidnappers (external or main goal). In Paris, Mills manages to identify the chivalrous man who used the 'taxi-rank' trick (sub-goal). With the help of his French police officer friend, Mills accomplishes a series of sub-goals which bring him closer to the identity of the Albanian criminal who was responsible for his daughter's kidnapping. After achieving another series of sub-goals, Mills is successful in locating the mansion where illegal auctions of girls takes place and sets out to infiltrate and save her from the higher-bidder's hands ( resolution of the main goal).

The protagonists must be going through a crisis, either personal, interpersonal or larger in scope, that will create the necessary basis for dramatic conflict. Psychologist Abraham Maslow has devised a six-part hierarchy of human needs, all core narrative components populating the deep structure. According to Maslow (Maslow, 1943, pp. 370-375) the hierarchy of needs are:

a. Biological and physiological needs, such as food, sleep, drink, warmth, etc. is often associated with one's survival. This is a universal need that all can understand and provides a clear conflict when encountered in films.

b. Safety needs, such as protection, security, stability, law, etc. In films, this need is usually portrayed by showing the character seeking a safety heaven, or attempts to escape from an intruder.

c. Love and belonging needs, such as friendship, family, intimacy, affection, relationships, etc. This can be the desire for a family or community.

d. Esteem needs, such as independence, confidence, self-respect, acceptance, prestige, etc. based on personal achievement or contribution to a professional field or the community.

e. Self-actualization needs, such as self-fulfilment, personal growth, acquisition of knowledge, gaining understanding, realising potential, etc.

f. Aesthetic needs, such as the appreciation of beauty, of pattern, of form, etc.

The deep structure forms the abstract spine of the [SW], and since it is populated with fundamental narrative aspects, it gives the story 'unity, coherence, and meaning' (Parker, 1998, p. 31). The parameters needed for the creation of the story-world are defined in the early stages, then their aesthetic interpretation is projected onto the surface structure with a variety of ways: visual, auditory, or a combination of both. This notion is conveyed by David Herman when he states that:

> "...action structures can be defined as higher-order [surface structure] narrative units or principles of organization based on inferences about the participants' [characters] (emergent) beliefs, desires, and intentions. Goals or desires, (i.e. target states, actions, or events) and the plans designed to reach them are, in turn, closely connected with participants' beliefs about the world." (Herman, 2002, p. 83)

A conclusion Mandler has reached is that:

> "...stories have an underlying, or base, structure that remains relatively invariant in spite of gross differences in content from story to story. This structure consists of a number of ordered constituents." (Mandler, 1984, p. 24)

The above remark emphasizes the existence of core components in the deep structures of narrative, and with the help of the necessary transformations in the intermediate level, they morph into a cohesive story on the surface structure.

### 4.6.2        Intermediate structure: the strategic level

The main distinguishing factor between deep and intermediate level is the differentiation of the components between core and secondary, a distinction which is universally understood. This is also the level where structurally relative parameters to the screenplay in question are positioned. The intermediate level is populated by the parameterization of the components that are relative to the physiological, sociological, intrapersonal, intellectual aspects and traits of the character, and the psychological aspects which are not regarded as fundamental. Such aspects are the characters' ideals, dreams, hobbies, pursuits, temperament, cultural activities, and so on. Structural components such as spatio-temporal parameters, setting, locations and the historical backdrop of the story, the vertical and horizontal constraints of the *state-space*, are all narrative components populating the intermediate level.

The intermediate structure is regarded as the strategic level, since all the decisions that pair up the theme, the context, the characters and their characterization takes place here. The strategic arrangement of scenes, events, and actions that form the plot is also actualised in the intermediate level.

### 4.6.3 Surface structure: The implementation level

The surface structure comprises the implementation level. The outcome and properties of the interactions of the dramatic components, which have been processed and modified in the strategic level, emerge onto the surface and are projected through action beats, scenes and scene sequences, supported by the structural arrangements of plot points. This is what Herman refers to by the term *action structures*:

> "...which can be defined as higher-order narrative units based on inferences about participants' [characters] (emergent) beliefs, desires and intentions." (Herman, 2002, p. 54)

This high order arrangement of the intermediate's level processes allows the audience to follow the story by creating the necessary mental benchmarks, and identify with the emotional struggle of the protagonists:

> "... these units, or principles of organization, allow listeners and readers to connect non-adjacent events into a coherent, psychologically plausible whole."(Herman, 2002, p. 54)

The behemoth of this abstract mental or conceptual construct, the [CSS], is physically arranged on the surface structure, through scenes:

> "...an operational durational part of the [screen]play occurring between successive changes in the space-time-character configuration of the action'. (Brainerd and Neufeldt, 1975, p. 1)

Even if scenes or scene sequences are moved around, with the necessary adjustments where needed, a strategic decision which aims to optimize dramatic conflict, clarify the characters intentions, or abide to structural limitations, the whole can retain its structure without a distortion of its emerging meaning. As Levitt notes:

> "...each scene is discernible and distinguishable as a separate entity, nevertheless, no scene is really separate from the whole which is its substantial ground. The scenes are the 'building blocks' in the [surface] structure. Specifically, then, structure is the place, relation, and function of scenes in episodes and in the whole play." (Levitt, 1971, p. 16)

The surface level, after the plot-algorithm transformations have occurred in the intermediate level, is the level where the story as a whole is actualised and outwardly projected, first to the filmmakers, and then to the audience.

## 4.7 The plot-algorithmic process: the generative aspects

In computer science, an algorithm is a computational method for solving a problem in a finite number of steps. Although in *Screenplectics* there are no computational and only qualitative aspects implicated in the actualisation of story-related problems, the term algorithm will be maintained throughout for two reasons. The first reason is that *plot-algorithms* aid the solution of logico-narrative problems often encountered in forking paths, even by approximation.

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The second reason is that plot-*algorithms* can be easily communicated schematically through flow charts, providing a visualisation of the forking path possibilities at each structural cardinal node.

### 4.7.1  A brief introduction to the concept of algorithms

The dramatic information arising from the configuration of the [SW] components through the assignment of values is then clustered in the deep and intermediate structural levels based on their relevance. Through the utilization of the *plot-algorithm,* the dramatic information is transformed into a coherent whole, the screenplay, out of which semantic narrative meanings arise.  In other words, an algorithm 'prescribes the activities that constitute the process' (Harel, 1992, p. 4). Authors utilize a way of thinking that incorporates a pool of abilities that help them understand, and subsequently tackle, problems related to narrative logic, and which resembles in many ways the definition of the *algorithmic thinking,* a pool of abilities described by Gerald Futschek. First is the ability to analyze specific problems, then the ability to specify a problem precisely, followed by the ability to find basic actions that are adequate to the specific problem.  Fourth is the ability to construct the correct algorithm to a given problem using the basic actions, fifth is the ability to think about all special and normal cases of a problem, and finally, the ability to improve the efficiency of the algorithm. (Futschek, 2006, p. 160)

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Based on Futscheck's above definition, a *plot-algorithmic* thinking process consists of the following steps:

a. a configuration of a collection of potential input narrative sets, possibly infinite but practically finite, which form the entirety of the story-world,

b. an analysis of the narrative logic of a story-related problem at a cardinal node and its detailed description,

c. the creation of the various forking path story-alternatives

d. an analysis of the effect each of the alternatives may have as different alternatives will have a different impact on various parts of the [CSS],

e. the selection of the desired story-alternative based on a variety of parameters such as the historic path, the hero's goal-path, the state-space, etc., and its implementation,

f. after feedback has been received, revisions where necessary of the implemented story-alternative,

g. the evaluation of the impact the implemented alternative has on the story in whole. The quality of the outcome is linked to the story-related assumptions and logic that were in place before the implementation, and

h. further revisions if necessary.

Our everyday life is consisted of algorithms, albeit abstract ones. We plan well ahead what time we are going to leave our house, by what

means we are going to travel to work, calculating alternative scenarios so not to be late. In our professional environment we interact with multiple colleagues, each and every one of them having a different personality, mood or agenda, and we must perform to the best of our abilities in order to solve arising problems. After several hours at work, once again we find ourselves planning our way back home, or whether and how to socialize. From making a phone-call, to delivering a lecture, to cooking, to filing our archives or tax-returns, can all be regarded as algorithms, with the computations happening abstractly and subconsciously in our minds. Retrospectively, all these are algorithms - finding the solution to a series of problems utilising a finite number of steps. Similarly, *plot-algorithms* [PA] share a fundamental importance in the creation of a cohesive and consistent story. The [PA] gives traction to the structural process, utilizing information rooted in the deep structures, processing, transforming and projecting it onto the surface structure as the desired outcome. Plot-algorithms are best visualised by the use of tree diagrams or flow charts, both having an ability to map the forward progression of a story at the cardinal nodes which present forking path alternatives through the use of branches. Technically, a tree is a hierarchal arrangement of. A flow chart portraying a basic algorithmic process is shown in figure [4.20].
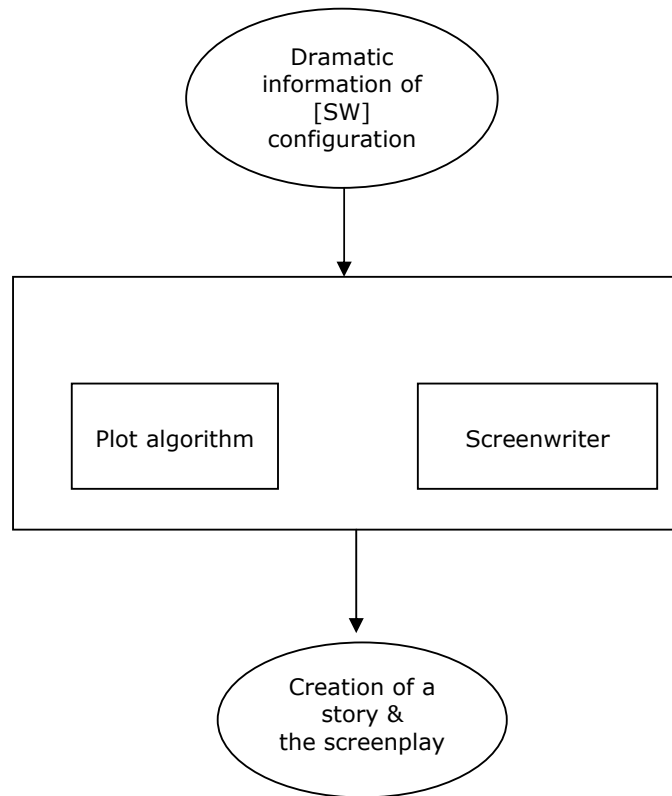
Figure [4.20] - Basic algorithmic process (Harel, 1992, p. 5)

Laying in advance the initial parameters that constitute the story-world, and utilizing the [PA] from page one, authors set out to "solve" any logic-related problems. In computer science, an algorithmic problem is considered solved when 'an appropriate, and effective, algorithm has been found' (Harel, 1992, p. 14). However, in narrative this is not always possible, or desired, as the context within which story-problems arise is qualitative rather than quantitative. In hindsight though, and working backwards, the steps taken and the choices made at each structural node can be mapped out and present this way the strategy behind a "solved problem" which may or may not be effective or

appropriate. Further revisions may be required until effective story-alternatives have been discovered and an optimized *plot-algorithm* is created and implemented. Even then though, there can be many different story-alternatives that could also produce effective results.

Trying the opposite, defining at the outset the exact plot-algorithms for the totality of a story, along with possible alternatives at each of the structural nodes, may lead authors to a finished draft, but its quality may be questionable. Utilizing the process of clustering relevant information, the best strategy is to address and tackle logico-narrative issues locally. In such a complicated and multifaceted procedure the arising logical problems must be reduced into smaller and more manageable problems then tackled in batches. Regardless, errors, or plot holes, will always ensue, thus further revisions may be required.

In order for problems of story-logic to be addressed, new information must be added or existing to be removed. Either way, informational ripples will be created along the *state-space* of the screenplay. Usually the errors can be found in the story-alternatives that were used at the cardinal nodes and forking paths junctures of the *state-space*. Such is the importance of the feedback process that the more the narrative logic is tried and 'tested', the better the chances for errors or plot holes not to surface since logical gaps and inconsistencies, or events that happen because of chance and not causality, will not be utilized.

### 4.7.2    The plot-algorithm mechanism

The existence of deep structure universal components emphasizes the fact that narratives are created globally with the same structural patterns, rules and principles, all sharing objective statuses, that have similarities with Chomsky's identification with languages (Chomsky, 1965), although they differ culturally and locally.  The ways of telling a story are vast, with differences in style, tone, genre and the emphasis on action or character, or both.  Present day storytelling has egressed from Victorian novelists, 'who regularly inserted events happening out of pure chance into their work' (Paulos, 1998, p. 63).   Since coincidences are, in principle, excluded or minimized in contemporary narrative, the way plots are constructed has become more deterministic.  Causality is one of the main forces, the other is tight narrative logic.  The main aspects of a deterministic plot adhere to the story's historic path, inner logic and cause-and-effect forward progression.  Thus, the description of a process which progresses the story by adhering to all the above is an imperative step for the attainment of tight narrative logic.

At each cardinal node, different strategies for the advancement of the story exist, utilizing as new input information the output information that was produced from the plotting and acting schemas at the previous node.   This way the adherence to the story's historical path is

maintained and the inner logic is sustained throughout. At a cardinal node a given event or action may be actualised or may not; a better alternative may present itself that utilises the dramatic information in a more efficient way. Alternatively, an event or action may act as an impediment to the overall plot, diverting the story away from the attainment of a goal, regardless of whether it offers an unexplored story dimension that appears to be appealing. Such a forking path possibility may be abandoned as its implementation could require substantial revisions.

Goal attained →
Event/Action successful

Actualization → Event/Action
necessary to the story, or a better
alternative was actualised

Event or
Action for the
attainment of
a Goal

Goal not attained →
Repeat with an alternative
event or action

No actualization → Event/Action
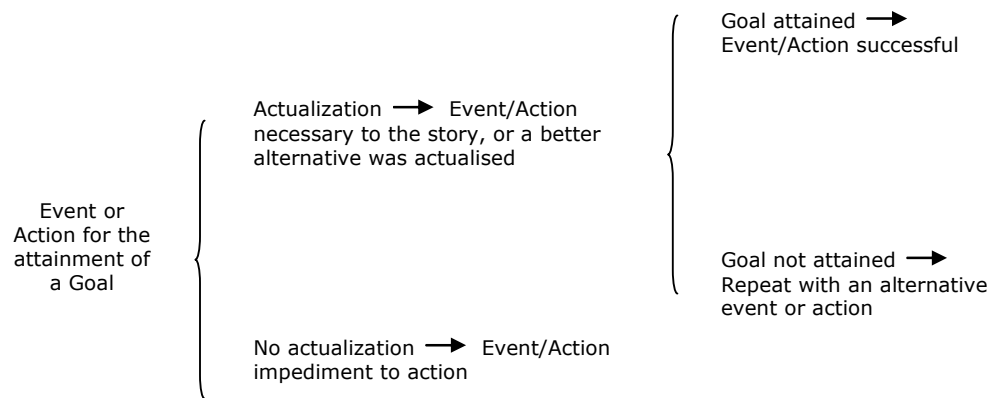impediment to action

Figure [4.21] - A basic plot-algorithmic process (Bremond, 1980, p. 388)

Using a tree diagram, the above process can be visualised as shown in figure [4.21], which captures the essence of the plot-algorithmic process in a more dynamic way. If the "Goal" is not attained this signifies that the narrative issue in question has not been properly addressed or that the path pursued has created logical errors along the *state space*. This in turn signifies that the event or action were in

fact an impediment to the attainment of the 'Goal' and thus resetting the process to the previous cardinal node for the utilization of a different story-alternative is paramount.
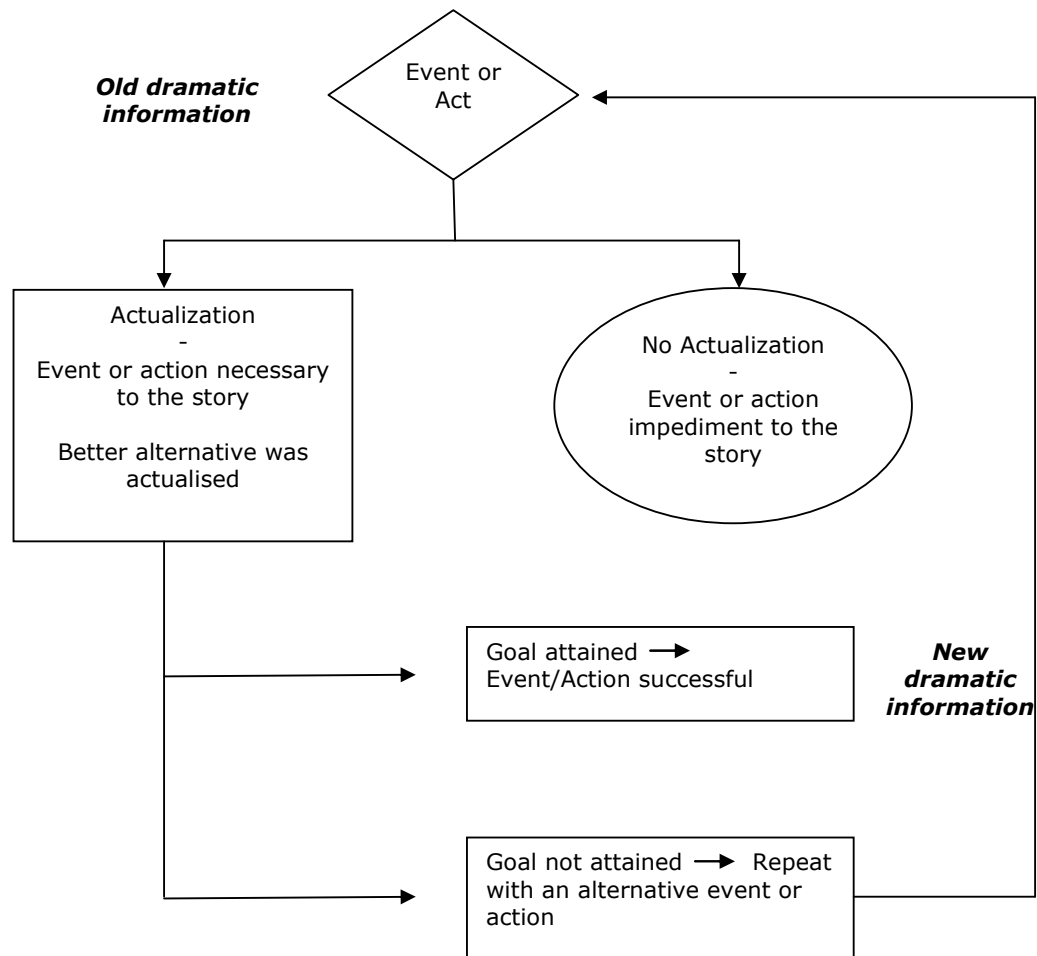


Figure [4.22] - The plot-algorithmic process

In essence, the [PA] mechanism can be described as the "Difference-Engine" (Minsky, 2006, pp. 188-189), shown in figure [4.22]. At each

structural node, the state of the present situation is compared, through

the action and plotting schemas, with the future possible ones and the

attainment of the 'Goal.'  The author comes up with a list of differences

between the states, which can be regarded as intermediate states,

and maps out paths as to how to attain the 'Goal.'  Then an event or

action is chosen which narrows the gap of differences between the

present and future states of the [CSS].  If the decision is successful, the

story advances without any logical inconsistencies.  If the decision turns

out to be wrong then the process is returned to the initial cardinal node

and is repeated.

```
                    ┌─────────────────────────────────────────┐
                    │  Change situation to reduce the difference │
                    └─────────────────────────────────────────┘

    ┌──────────────────────┐                    ┌──────────────────────┐
    │  Description of the   │   ┌────────────┐   │  Select an event or  │
    │  [CSS] present state  │   │ Difference │   │  action to reduce the│
    └──────────────────────┘   │ between    │   │  difference          │
                               │ the states │   └──────────────────────┘
                               │     -      │
    ┌──────────────────────┐   │ Necessary  │
    │  Description of the   │   │ intermediate│
    │  [CSS] desired        │   │ steps      │
    │  future  state        │   └────────────┘
    └──────────────────────┘
```
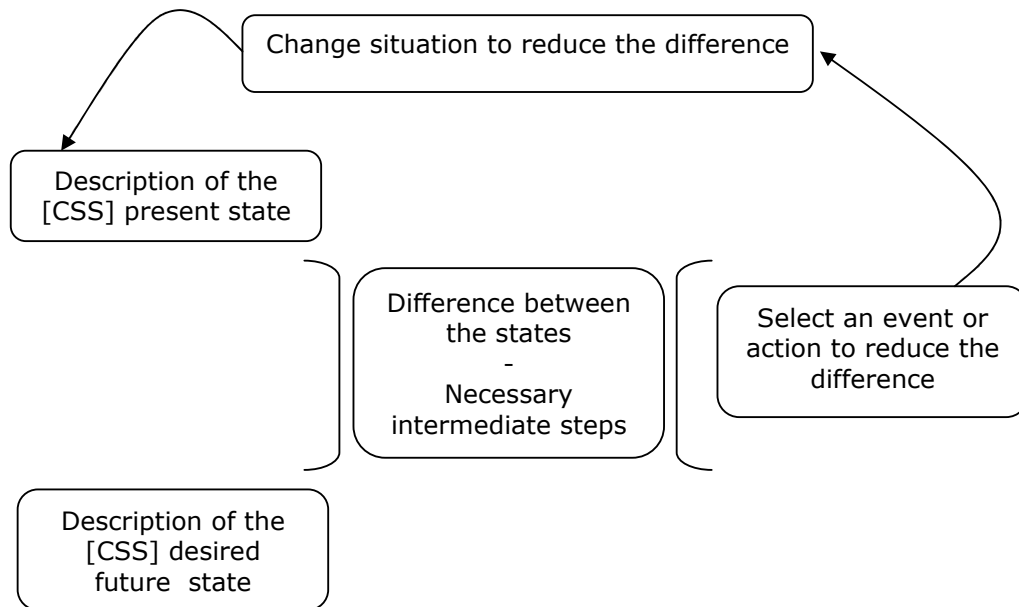
Figure [4.23] - The "Difference-Engine" (Minsky, 2006, p. 188)

Having reduced the overall problem to smaller ones, the author is now in control of the overall process. One of the advantages of the [PA] is that it allows the story's coherent segmentation by connecting components, beats and units of dramatic information which populate different structural levels. The active characters in each cardinal node are assigned a sub-goal relevant to the present situation. The [PA] links all these sub-goals, maintaining a connection with the main 'Goal' and ensuring the forward progression of the story. In other words, the [PA] offers a "self-correcting" alternative and advances the story through a process of reduction between intermediate states. By reducing the differences between present and future states, the transformation process in the intermediate level becomes evident as change is realized among events and the product of that change emerges onto the surface structure. Furthermore, the structural points serve as "islands" or "stepping stones", reducing the problem into smaller ones. Further reduction of the overall problem can be achieved through scenes and scene sequences. Conflict in drama is produced because of the differentiation that exists between the components and their [SW] configuration. A story emerges as a result of the differences between the interaction of the components and not because of their characteristics.

Mapping out the alternatives, a routine can be created which takes into consideration the present and future states of the screenplay, a

process which is similar to an 'If A then Do Action then Z routine' (Minsky, 2006, p. 138), where *Action* are the steps necessary for a goal to be attained.  If an author wants to proceed from a present state A to a future state Z, the problem may appear to be too big to tackle in a single attempt.  Thus, the reduction of the problem to smaller ones is a prerequisite for its solution.  Such a routine is similar to this:

**If A** ⟶ **Do Action #1** ⟶ **then M**, where M is an intermediate state, and then

**If M** ⟶ **Do Action #2** ⟶ **then Z**, where Z is the desired state.

Not all events or actions lead to the desired solution, and both steps may have to be repeated.  Sometimes the above process can be reversed, a method which is known as 'backward reasoning', which Simons defines as the method which:

> "...identifies those events in a story that are presupposed by later events and cannot de elided without destroying the intelligibility of the story."
> (Simons, 2008, p. 119)

Using backward reasoning, the above routine looks like this:

**To Z** ⟶ **Action/Event #3 happens** ⟶ **then M**, and then

**To M** ⟶ **Action/Event #4 happens** ⟶ **then A**

The 'backward reasoning' method in screenwriting is usually referred to as '*foreshadowing and payoff*', a process where prerequisite conditions

must be created in early parts of the screenplay that will allow specific

events to happen in later parts.  It is the inner dynamics of a [CSS] that

define the author's decisions at each structural cardinal node as

Simons observes:

> "At each cardinal node of a story... and at each
> bifurcation, characters, players, or complex
> dynamics systems have to make a choice between
> the branches that are available to them... Forking-
> path narratives represent in an admittedly modest
> and very partial way a part of the state space that
> opens up for the characters at a certain bifurcation
> point." (Simons, 2008, p. 120)

It seems that the *plot-algorithm* mechanism brings together two

different but irreducible schools of thought: the 'logico-scientific mode'

and the 'narrative mode' as these have been described by Jerome

Bruner:

> "...the types of causality implied in the two modes
> are palpably different.  The term then functions
> differently in the logical proposition 'if x, then y' and
> in the narrative recit 'the king died, and then the
> queen died.'  One leads to a search for universal
> truth conditions, the other for likely particular
> connections between two events - mortal grief,
> suicide, foul play."  (Bruner, 1986, pp. 11-12)

Where the 'logico-scientific mode' seeks to discover truth, the 'narrative

mode' seeks to endow human experience with meaning and a goal-

oriented purpose.  The [PA] mechanism succeeds in combining the two

schools of thought.  Through the utilization of the deep structure [SW]

configuration, the [PA] conveys meanings which are universally

understandable and grounded in personal experience, while it advances the story through the application of reasoned hypotheses on story-logic at each structural cardinal node. *Plot-algorithms* rely on a population of variations of story-alternatives where the outcome is not only judged by the quality of the solutions presented but also by the quality of the dramatic information utilized in the first place. If the desired outcome is not produced then the initial dramatic information of the [PA] has to re-defined, re-parameterized, and re-implemented. Again, the indeterministic nature of infinite story-alternatives before the parameterization of the story-world transforms into a deterministic, tightly connected, mesh of causal progressions. The configuration of the [SW]'s components may welcome infinite values but only a finite number of propositions provide the desired outcome. The Goldilocks view of storytelling implies then that good stories emerge when all the dramatic conditions are just about right.

### 4.7.2.1    Non-linearity and the [PA] mechanism

A requirement that shows the generative dimension of the *plot-algorithm* is finiteness (Chomsky, 1968): a problem must be solved in a finite number of steps. Story-alternatives, and more so combinations of dramatic information, are infinite. The [PA] has an initial state, an intermediate state where the dramatic information produced by the acting and plotting schemas in the initial state is utilised as new, and an

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end state which can be utilised in the next cardinal node. The [PA] also has a final state, the testing taste, where the story is checked whether it has adequate dramatic value. The resolution of the story may not be compatible with the historical path or inner logic and inconsistent information may start appearing. Infinite story alternatives can be created by closed loops which feedback back onto the cardinal node that was used as the initial point of the [PA] in question. The dramatic information is evaluated, and if necessary, changes in the [SW] parameterization are made in order for the right conditions to be created for the unhindered advancement of the story. The acting and plotting schemas that feed the [PA] with information must be precise and unambiguous since both are aspects of the control process that regulates its functionality. The *plotting schema* serves as the initial state of the *plot-algorithm*, feeding each structural node with dramatic information that adheres to the [CSS]'s historical path and inner logic as such: first, by providing a summary of the situation, then by describing *the set up* and the *current state of affairs*, i.e. characters involved, location, theme, subtext, and their motives, intentions, etc. Third, by providing the *inciting incident* that alters the current state of affairs, fourth by describing the sub-*goal*, which points to what the character has to achieve in the intermediate state so the story to advance in the appropriate direction. Fifth, by providing a *complicating action* which stands as the opposing force and presents an obstacle to the hero, finally, by presenting a *resolution*, which is the

desired state the author wants to get. The *action schema* creates a closed loop if the story-alternatives are unsuccessful.   The action schema feeds the [PA] with the kind of information that will transform the plotting schema's information.   Since both schemas contribute similar or overlapping information, only the two options presented below play an active role in the transformation process:   first is the *actual act or event*, which will advance the story, and second, the *manner and means* of action.

Evaluation of information through the closed loop happens either by *direct sequencing* of the actions or *conditional branching* (Harel, 1992, pp. 19-20) as follows:

- *direct sequencing* is of the form "do A followed by B then by C...", and charts out all the actions carried out by the character in sequence, and

*conditional branching* offers story alternatives and is of the form "if Q then do A otherwise B", or "if Q then do A", or "if Q then do A or B", where Q is a specific condition which has to be met in order for the story to advance, i.e. convey specific information through dialogue that will be used later, the character has to move to a specific location, or carry out a specific act.

Figure [4.24] shows all three states of the [PA] and how closed loops are created for the generation of infinite story alternatives.
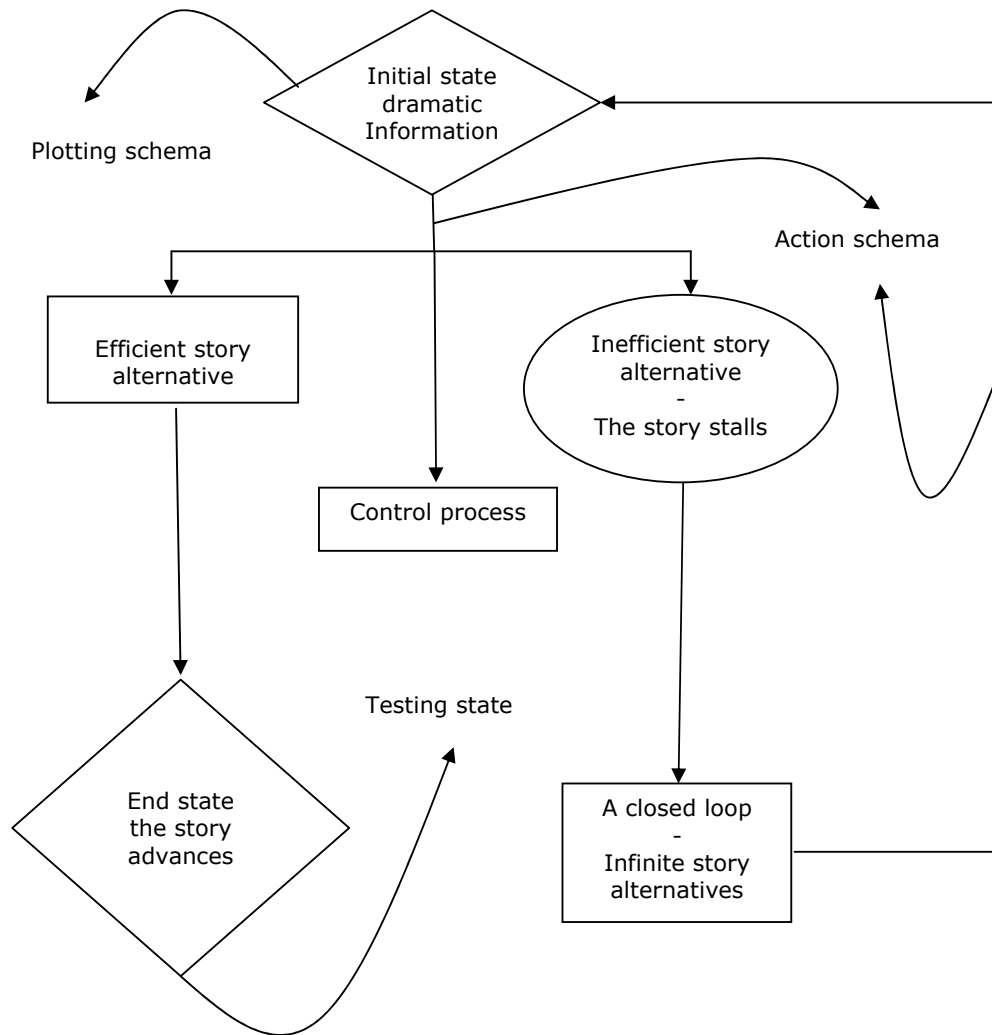
Figure [4.24] - Closed loops for the creation of infinite story alternatives

These instructional routines are called "If then Do" rules. The '*If*'
describes conditions that have to be met or where certain events must
happen, and the '*Do*' describes the action that needs to be taken. In
general, a system consisted of a succession of "If then Do" propositions
is called a '*Rule-Based Action Machine*' (Minsky, 2006, p. 20). Taking
into consideration the [SW] parameterization, the "If then Do" action

routines that will advance the story can then be devised and implemented into the *plot-algorithm*. Such a process cannot be too specific or rigid, but must rather be based on flexible rules and principles which have a universal appeal, as Minsky argues:

> "Indeed, if the If of a rule were too specific, then it would not apply to enough situations. This means that our rules must not specify too many details, but need to express more abstract ideas." (Minsky. 2006, p. 137)

The mechanism that aids the evaluation process of what story-alternatives produce the desired outcome is shown in figure [4.25], where the "If then Do" routine is combined with the "Difference-Engine."
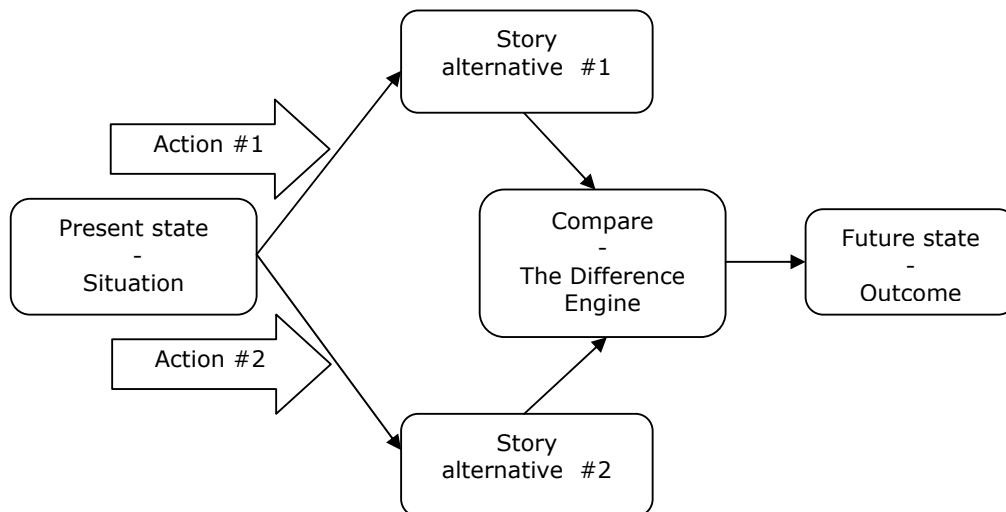


Figure [4.25] - "If then Do" routine and the "Difference Engine". (Minsky, 2006, p. 135)

The generative capacity of *Screenplectics* is manifested first, by the finite number of base rules which lead to the parameterization of the narrative components in the deep structure and, second, by the *plot-*

*algorithm* mechanism which interconnects such information on all three structural levels. Through a finite number of narrative components and their recursive, but varied, combinations, an infinite number of stories can be created.

The relation between the [PA] and the three structural levels is shown on figure [4.26].
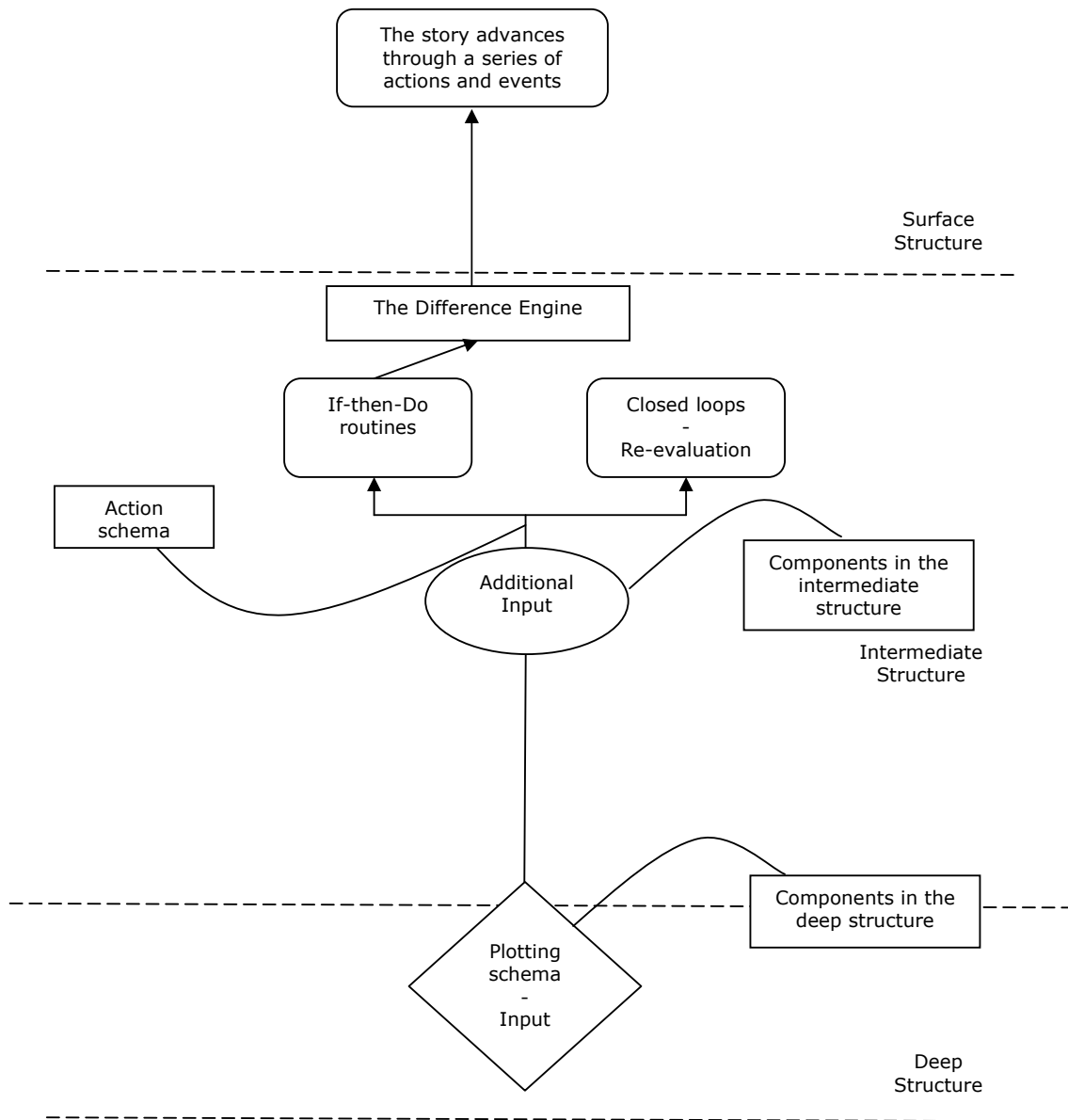
Figure [4.26] - The relation between the [PA] and the three structural levels

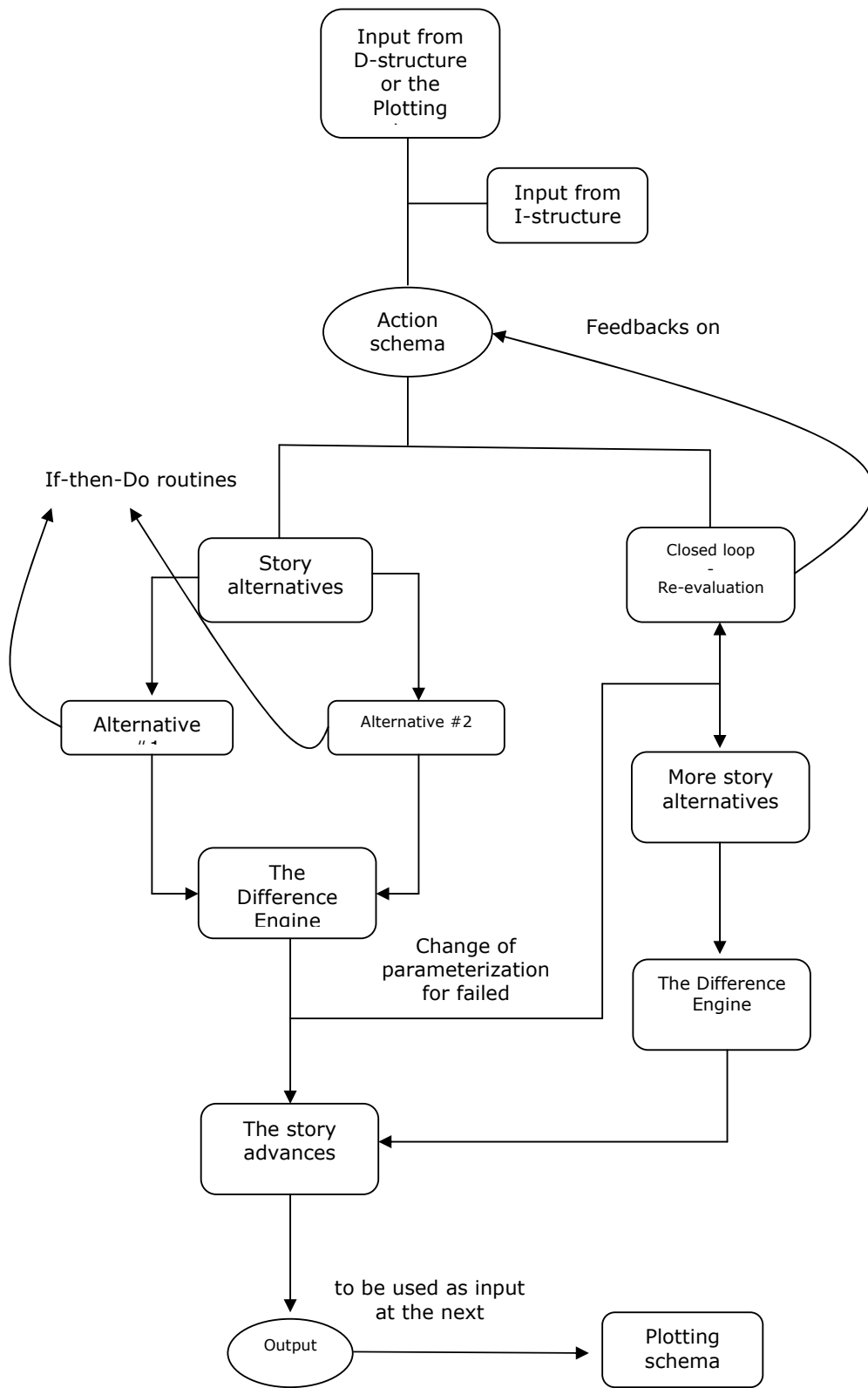An elaborate *plot-algorithm* is shown below in figure [4.27].

Figure [4.27] - An elaborate plot-algorithm

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The [PA] is a process that happens throughout the [CSS] and is used for interconnecting, interrelating and transforming tangible parameterized [SW] components, such as characters and their psychological aspects of their personae, with other more abstract ones such as the boundaries and the logical threshold of the [SW]. Therefore, the *plot-algorithm* achieves symmetry between all three structural levels and throughout the screenplay, overcoming the problem of the asymmetrical distribution of information which was discussed in chapter three. The relation of the *plot-algorithm* with the [CSS] in whole is shown in figure [4.28].
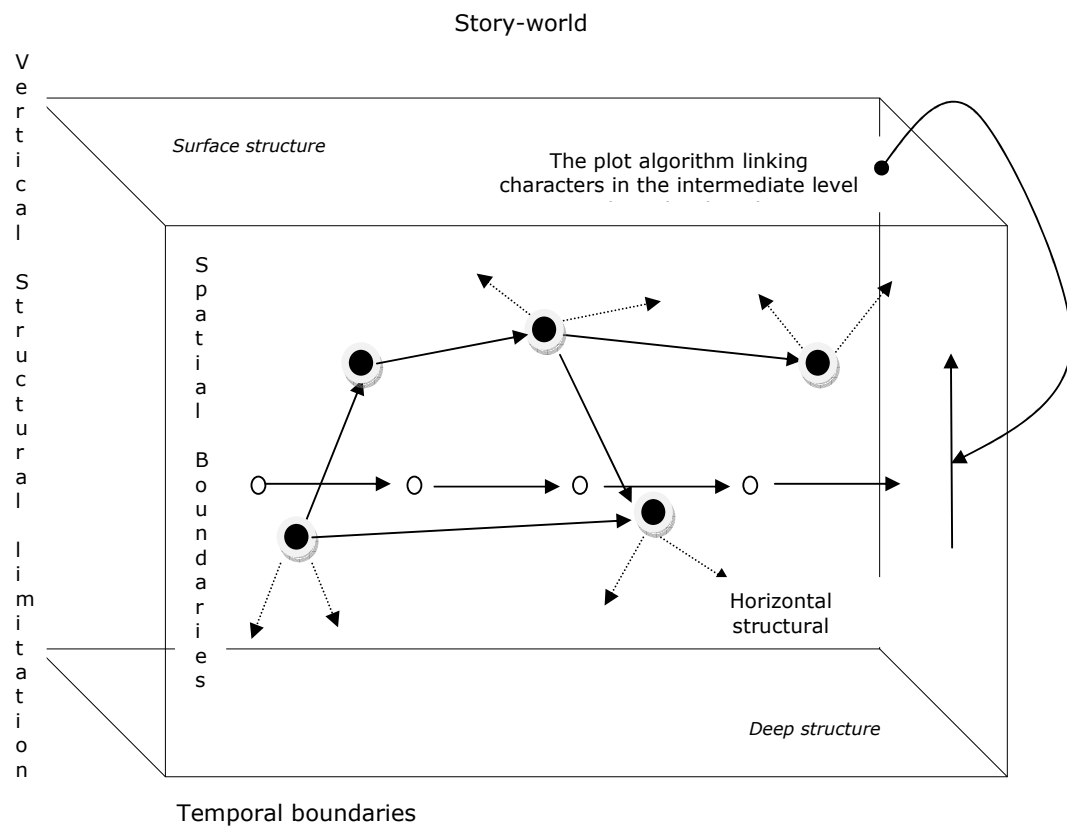


Figure [4.28] - The plot-algorithm and its relation to the [SW] of the [CSS]

# Epilogue

**Optimization through the feedback process**

As I argued in chapters three and four, understanding the screenplay as a complex system presupposes the development of a set of rules and principles that describe the dynamics between its dramatic components. Thus, the structure of a [CSS] and the parameterization of the story-world at hand must be viewed as flexible instruments which can be modified where necessary if the dramatic efficiency of the narrative system is to be improved, and not as a rigid set of rules and principles which must be followed and applied religiously. What *Screenplectics* has to offer then is increased insight for the better understanding of the underlying dynamics of narrative and of the semantic process between the components which causes stories to emerge in context. The explanatory power of *Screenplectics* can be tested against the empirical analysis of existing films and screenplays. As a mode of philosophical thinking then, *Screenplectics* will not only be used as a blueprint for the creation of narrative works and screenplays, moving away from the catholic approach of screenwriting textbooks and manuals, but the concepts and ideas explored herewith will also serve as stimuli for further research in the field of narrative analysis since screenwriting emerges from this research as an academic discipline.

The human mind is a subtle and complex engine of imitation which has the ability to combine existing abstract concepts in the pursuit of the creation of new ones. The same patterns of storytelling are recreated

and the modus of operation is maintained among storytellers since the genre of tragedy evolved in ancient Greece. As Eric K. Drexler, one of the leading experts in the field of nanotechnology, argues in his landmark work *Engines of Creation*, 'ideas split, combine and take multiple forms' (Drexler, 1996, p. 35), and 'ideas mutate, replicate, and compete. Ideas evolve' (Drexler, 1996, p. 35). These replicating and imitating mental patterns are called memes, a term coined by Richard Dawkins in 1976, who states:

> "Examples of memes are tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches. Just as genes propagate themselves in the gene pool by leaping from body to body via sperms or eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via a process which, in the broad sense, can be called imitation. If a scientist hears, or reads about, a good idea, he passes it on to his colleagues and students. He mentions it in his articles and his lectures. If the idea catches on, it can be said to propagate itself, spreading from brain to brain. As my colleague N.K. Humphrey neatly summed up an earlier draft of this chapter: `... memes should be regarded as living structures, not just metaphorically but technically. When you plant a fertile meme in my mind you literally parasitize my brain, turning it into a vehicle for the meme's propagation in just the way that a virus may parasitize the genetic mechanism of a host cell." (Dawkins, 2006, p. 192)

The way stories are conceived, developed and communicated does not differ, in principle, from the process described above by Dawkins. In narrative, a vast variation of stories exists that share recurring themes which are universally identified. Nevertheless, the new story possibilities

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appear to be unlimited. New concepts emerge, new discoveries are made, new sciences and technologies are explored, new inventions are being facilitated, all serving as the basis for original "*what-if*" story concepts. This framework, combined with the authors' unique point-of-view and overall perception of the world, seems to be responsible for the production of an infinite number of story possibilities, as Drexler states:

> "Where goals and complexity rules, limits need not bind us. To the creation of symphony and song, paintings and worlds, software, theorems, films, and delights yet unimagined, there seems no end. New technologies will nurture new arts, and new arts will bring new standards. The world of brute matter offers room for great but limited growth. The world of mind and pattern though, holds room for endless evolution and change. The possible seems room enough." (Drexler, 1996, pp. 165-166)

A Complex Screenplay System [CSS] operates on a basis of flexible rules, principles and transformations that exist in a state of equilibrium. This is a state where story-logic inconsistencies in violation of the threshold of the audience's suspension of disbelief have been minimized, or better, have been eliminated. Although there will always be a threshold of tolerance to flimsiness in films, such as with bad guys being really awful with their aim or with the excessive heroics of Indiana Jones as he is swimming to and subsequently managing to enter a submarine that is about to submerse in *The Raiders of the Lost Ark*, this does not negate the necessity of a process that corrects logical flaws in narratives. As Piaget explains, 'transformational laws of this kind

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depend upon the interplay of anticipation and correction.' (Piaget, 1968, p. 16)

The checking process commences when each draft of the narrative work is completed, having as a goal the elimination of chance and coincidence, and the minimization of logical inconsistencies. Too many adjustments, additions or removals of narrative blocks could destabilize the screenplay, throwing it off its state of equilibrium. Nevertheless, narrative evolution within the confines of a [CSS] happens by 'adding new fixes and patches that modify structures that have already been established' (Minsky, 2006, p. 105). Such an evolutionary process increases order, and therefore, complexity. Narrative evolution operates on a system of positive feedback and builds on its own increasing capacity: capable proceedings developed in one stage are used for the advancement of the narrative system to the next one and so on. It seems then that narrative or informational evolution shares many of the characteristics of the processes of biological or technological evolution.

More often than not, several of the elements of a screenplay might not be functioning even after it has been put in its first draft format. Through a process of feedback from a wide range of parties, i.e. studio executives, producers, representatives and screenwriting peers, internal adjustments to story inconsistencies can be implemented. Thus, the

feedback process can be seen as a 'goal-directing process of information re-organization which dampens out deviations' (Marion, 1999, p. 75), while its goal is to bring the narrative work in a state of equilibrium where the suspension of disbelief has been achieved or re-instated.  However, there are always hazards in the over-developing of a screenplay since its historical path and inner logic may be diluted and plot holes might start appearing by the careless implementation of story alternatives.

The [PA] process is similar to the trial-and-error process of falsification proposed by Karl Popper for the evolution of knowledge.  The basic process can be described as trying new ideas and solutions to an existing problem and discarding those which did not produce the desired outcome or have produced one which lacks an objective status:

> "The first state in our model is the problem. The problem arises when some kind of disturbance takes place - a disturbance either of innate expectations or of expectations that have been discovered or learnt through trial and error. The second stage in our model consists of attempted solutions - that is, attempts to solve the problem. The third stage in our model is the elimination of unsuccessful solutions." (Popper, 2010, p. 4)

The Popperean perspective requires everything to be seen as a tentative problem in seek of a solution.  In screenwriting, a problem-solving process from start to finish, the elimination of inappropriate

solutions must be the main focus. Hence, the tentative solutions have to be objectified through a thorough analysis of the narrative logic. Thus, a feedback process can be utilized as an operation of criticism to the ideas that have been put herewith. With the inclusion of the feedback process, the model is shown below (Popper, 2010, p. 14):

a. the old problem (first draft),

b. putting forward of tentative solutions and ideas (development),

c. elimination of unsuccessful solutions through a process of peer-based feedback and thorough analysis of the existing solutions,

d. the new problem, arising from the critical discussions of the old problem (new draft).

Through a critical discussion, new logico-narrative problems will always arise thus new assertions and story-alternatives have to be considered. The initial [SW] parameterization may need to re-configured in order to allow the facilitation of new ideas. As I explained in chapter three, this is not an easy task due to the inherent non-linearity and dynamic interrelations of the narrative components. When a [CSS] reaches a state of equilibrium, i.e. the inner narrative logic contains no substantial plot inconsistencies or any evident weaknesses, small adjustments can cause a cascade of large changes throughout its state-space, causing it to stop being functional. Even more adjustments would have to be made in order to correct this, which in turn can create logical imbalances, requesting further troubleshooting and creative problem

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solving.   As a new population of ideas are proposed, a new cycle

begins where 'the selection, implementation, criticism and modification

of the proposed ideas starts anew' (Miller and Page, 2007, p. 185).   As

the [CSS] increases in size, or for that matter in informational

complication, 'its performance is likely to decline' (Minsky, 2006, p. 104).

This refers to *the organism principle* and is explained by Minsky:

> "When a system evolves to become more complex,
> this always involves a compromise; if its parts
> become too separate, then the system's abilities will
> be limited - but if there are too many
> interconnections, then each change in one part will
> disrupt many others." (Minsky, 2006, p. 104)

Thus, an optimal level of story assumptions are needed for a [CSS] to

remain consistent and functional as a unified whole.   The more

unnecessary over-complications are avoided, especially through the

employment of chance and coincidence, the closer we get to an

equilibrium argument, or as Misnky explains: 'never make more

assumptions than you need' (Minsky, 2006, p. 147).   This relates to the

concept of *rational economy* proposed by Rescher:

> "Since we cannot generally tell in advance of the
> fact just where and how further complexity will
> arise, rational people will not introduce
> complications where and insofar as they are
> needed to accomplish the tasks in hand." (Rescher,
> 1998, p. 200)

 The bigger, in terms of informational complication, a narrative work

gets, the greater the prospects of various parts to stop functioning.   By

applying *the Deus-ex-machina rejection principle*, which focuses on

the elimination of superfluous options or options with reduced reliability, the risk of story incomprehensibility can be reduced or avoided altogether. A tight adherence to the [CSS]'s historical path and inner logic increases the chances for a tighter plot. Good story-alternatives derive from good narrative assumptions and a solid [SW] configuration. However, the relentless application of Occam's razor can hinder the results and produce an inconsistent screenplay. As Minsky argues, the aim must be a level of simplicity and clarity, where unnecessary complications have been removed, but always retaining room for improvements:

> "...for when you know that your theory is incomplete, then you ought to leave some room for other ideas that you later might need." (Minsky, 2006, p. 147)

Nevertheless, under the right conditions, optimization of story-world parameters, either at the initial stage or through a critical discussion and feedback, leads possibly to increased efficiency. However, story evolution cannot only be described as a process of selecting the more appropriate solutions as it also involves the elimination of those solutions which have adverse or negative effects. The same holds for the optimization of a story, described by Minsky through the *optimization paradox*:

> "The better a system already works, the more likely each change will make it worse - so it gets more difficult for it to find more ways to improve it[self]." (Misnky, 2006, p. 181)

Over-simplification may lead a [CSS] to stagnation, whether over-complication may cause it to be convoluted and have reduced dramatic efficiency. There is a state of equilibrium between these two extremes states and careful consideration must be given to the [SW] assumptions and parameters. A [CSS] with increased external complexity and reduced internal complexity is more enticing than a [CSS] with reduced external complexity and increased internal complexity. A [CSS] with increased internal complexity, i.e. utilizing a large number of confusing parameters and "what-if" assumptions, produces an overall convoluted story which fails to suspend the audience's disbelief. In comparison though, audiences will be able to follow a [CSS] with reduced internal complexity easier although its story might not be entirely original.

The authors' task is twofold then. On one hand, they must fine tune the configuration of the story-world in such a way that it will be rich in story possibilities. On the other hand, they must ensure that the [SW] configuration is going to be as flexible as possible in order to allow the inclusion of new information that will allow in turn any plot-related issues to be properly addressed. This is a challenging task to accomplish since, through the insertion of additional story-parameters and assumptions, the [CSS] might start losing its underlying structural sturdiness, a process which may lead to unpredictable results. It is

evident then that what paves the way for the dramatic optimization of

a [CSS] is flexibility and not rigidity, as Cilliers argues:

> "If the plan is too rigid... the system will not be able
> to cope with unpredictable changes. On the other
> hand, it will also be disastrous if the system tries to
> adjust itself to every superficial change... Being able
> to discriminate between changes that should be
> followed and changes that should be resisted is
> vital to the survival of any organisation..." (Cilliers,
> 1998, p. 110)

Thus, the [CSS] has to be 'as diverse as possible, not as structured as

possible' (Cilliers, 1998, p. 117), and 'the more diverse the structure, the

richer is the information that can be stored and manipulated' (Cilliers,

1998, p. 117). These two statements also link back to the concept of

heterogeneity which I explained in chapter three. The more

heterogenic a work of narrative is, the more diverse possibilities exist for

the generation of interesting story alternatives.

A good approximation of the overall process comes from the

*emergency discipline* which was developed in operational research for

the handling of strategic military decisions and optimal logistical

scheduling. Its main guidelines, as described by Skyttner (1996, p. 23)

are: first, it is not necessary to understand everything, rather to have it

under control. Ask what happens instead of why. Second, do not

collect more information than is necessary for the job. Concentrate on

the main consequences of the task, the small details may rest at

peace. And third, solve the problems of today and be aware that

prerequisites and solutions soon become obsolete. Functional rationality refers to 'the implementation of goals and not to their selection' (Scott, 1998, p. 33). As Gouldner argues:

> "Fundamentally, the rational model implies a 'mechanical' model, in that it views the organization [screenplay] as a structure of manipulable parts, each of which is separately modifiable with a view to enhancing the efficiency of the whole. Individual organizational elements are seen as subject to successful and planned modification, enactable by deliberate decision."
> (Gouldner, 1959, p. 405)

This process is, in its essence, a description of functional rationality for the addressing of specific story problems, and it refers to a series of actions which are organised in such a way as 'to lead to predetermined goals with maximum efficiency' (Scott, 1998, p. 33). This research consolidates the notion that for the comprehension of complex narrative dynamics and mechanics, encountered in various forms of narrative, a more comprehensive theoretical framework is required. *Screenplectics*, the proposed theoretical framework and narrative model, combines the strengths of an inductive approach for the formulation of tentative theories with strong empirical confirmation for the successful theoretical candidates. Since the aim of this research is empirical functionality rather than philosophical abstraction, the underlying objectivity in the proposed solutions has been elevated as its main focus. Therefore, propositions must produce objective statements then must be confirmed by empirical evidence. The

theoretical propositions of *Screenplectics* in chapter four constitute the base rules and principles of the proposed narrative model, leaving room for further speculation and research in the field. The propositions which will be confirmed by evidence will be regarded as they have achieved an objective status whereas those propositions which will not supported by evidence will be discarded and the process for the enrichment of the model will start anew.

The two fundamental questions posed in the opening chapters of *Screenplectics*, that is, how or what makes stories emerge in the context of narrative, and the investigation of the underlying dynamics that allow a screenplay to function as a unified whole, have been hereby answered. The former through the exploration of the complex dynamics and synergetic interaction of the narrative components in the three levels of structure where I argued that story is the emergent phenomenon of the non-linear, forward-thrusting, cause-and-effect interactions of those components. While the latter through the adaptation of complexity theory in the field of narrative analysis. One of the most important contributions of complex narrative theory is the elevation of context into an intrinsic part of the narrative system it describes. The complex narrative dynamics allow the dramatic information to be organised into meaningful and goal-oriented patterns that in turn produce meaningful results: *stories*. Furthermore, the *plot-algorithm* mechanism that facilitates the clustering of dramatic

information into meaningful patterns, through the application of the action and plotting schemas, and is responsible for the emergence of stories onto the surface structures has also been presented herewith. Such a mechanism, which can be regarded as the foundation of every tentative theory, has been absent from 'text-book' approaches or similar theoretical models. Moreover, I would like to believe that the thorough description of the underlying principles of *Screenplectics* share a universal, therefore an objective, status and succeed in producing a wide array of stories in various narrative formats, forms and genres. Therefore, it seems that the explanatory adequacy of *Screenplectics* has been satisfied to a satisfying level.

# Appendix

### 4.3.5        A fundamental component of the [CSS]: the character

Physiological, psychological, intellectual, sociological and intrapersonal parameterization categories.

Physiological

- Sex,

- Age, date and place of birth,

- Marital status,

- Height and weight,

- Race, physical appearance and body posture,

- General health,

- Mannerisms and gestures,

- Habits, i.e. smoker, drinker, drug abuser,

- Colour of eyes, hair and skin, and hairstyle or make-up

- Physical defects, abnormalities, diseases

- Voice quality,

- External features, i.e. rings, earrings, etc.


Psychological

- Motivations,

- Needs,

- Aspirations,

- Conflicts,

- Ideals, dreams,

- Level of commitment, purpose in life, etc.,

- Moral standards,

- Ambitions,

- Amusements, hobbies, pursuits,

- Attitude towards life,

- Temperament,

- Cultural activities, i.e. music preference, dancing, dining, movie-goer, theatre-goer, etc.,

- National cuisine preference,

- Complexes,

- Dress code,

- Fears, anxieties, complexes,

- Deontology and approach to work ethics, i.e. hard-worker, achiever, lazy, etc.,

- External impressions, perceived by others, i.e. good natured, punctual, tidy, pleasant, etc.,

- Personality predisposition, introverted, extroverted,

- Everyday routine, in terms of place of lunch or dinner preference, evening activities, meeting others, etc.,

Intellectual

- Name and identification,

- Mental defects,

- Mental qualities,

- Level of intelligence,

- Level of education and academic achievements,

- Mental abilities, in terms of inclination towards specialised areas of the human endeavour, i.e. science, arts, theatre, literature etc.,

- Mental qualities, in terms of imagination, reasoning, judgment, biases, taste, etc.,

- Political affiliations,

- Intellectual pursuits,

- Secular, humanitarian or religious beliefs,

- Nationality and place of residence,

- Eco-friendly or consumerist attitude


## Sociological

- Social class based primarily on inferences of income level, i.e. lower, middle or upper,

- Income level,

- Current job and position, past jobs and positions,

- Police record and criminal activity,

- Occupation,

- Activism or social interaction,

- Leisure activities,


## Intrapersonal

- Name, profession and living status of parents and relatives,

- Name, position and social status of employer,

- Name, profession, living and social status of spouse,

- Name, profession, living and social status of children, or nieces,

- Type of vehicle,

- Home, decoration of it, etc.,

- Pets,

- His attitude towards, spouses, children, neighbours, employs or employers, strangers, siblings, less successful people, friends, competitors, minorities, etc.

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