

## A Concepto-Mathematical Structural Model for The Akan Folktale Story

Patricia Beatrice Mireku-Gyimah

Languages Section, University of Mines and Technology (UMaT), Tarkwa, Ghana.

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**Abstract:** The Akan Folktale (AF) is popular for its personified characters and fictive world symbolic of the real world. Much of the studies on AF relate to its characterisation, moral and ethical lessons, relevance to contemporary society and entertaining value. But the story structure of the AF has not been adequately explored. By adapting Propp's "morphology" of the folktale, this paper examines the AF Story Structure (AFSS) and suggests a concepto-mathematical model representing its general structural design. Instead of Propp's thirty-one character functions, the suggested model comprises seven components: three societal elements (that reflect Akan cultural environment and societal values inherent in the AF) and four functions (that capture character actions in the AF). The societal elements and their notations are: Initial Circumstance ( $S_{\cdot}$ ), Consequence ( $S_{\S}$ ) and Resolution ( $S_{\zeta}$ ) while the character functions and their notations are: Exit ( $F_{\cdot}$ ), Encounter ( $F_{\S}$ ), Acquisition ( $F_{\zeta}$ ) and Application ( $F_{*}$ ). After analysing about 50 Akan Folktales collected from Ejisu-Juaben District in Ashanti Region of Ghana, it is concluded that every AFSS has all or some of the seven components always occurring in a linear sequential order and that a single component or cluster of components may be repeated. The suggested concepto-mathematical structural model showing the linear sequential order of the seven components is presented as:  $AFSS = S_{\cdot} + F_{\cdot} + F_{\S} + F_{\zeta} + F_{*} + S_{\S} + S_{\zeta}$ . Each component has variants and the variants have options, all of which are explained in this paper. The study also concludes that the sequence in the AFSS may occur once (when it is a single-move story), twice (when it is a double-move story) or thrice (when it is a triple-move story) to create three major AF story types. The paper uses three selected AF stories as examples of these and to demonstrate how a unique formula can be written for every AFSS based on the suggested model.

**Key words:** Akan Folktale Story % Story structure % Model component % Moves

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### INTRODUCTION

The Akan Folktale (AF) remains an aspect of the rich tradition of oral literature which Ghana has been endowed with. Since long, scholars [1-6] have collected, transcribed and documented some of them. As a result of their inherent didactic potential, the AF, like the folktales of other cultures, has been very much loved by society and used to inculcate moral lessons in people, especially the younger ones and also for exposing the culture to them. While scholars such as Yankah [7, 8], Opoku-Agyemang [9, 10] and Agyekum [11] have done various studies on the AF and society has been fascinated by the ethical value of the AF, they have been less enthusiastic about its story structure. The folktale story refers to the main story "contained" in the folktale as opposed to the "full" folktale with its beginning and ending patterns, musical interludes and the interjections. Therefore, by Akan Folktale Story Structure (AFSS) is meant that story which the AF tells and its layout or design. It is the objective of this paper to analyse the AFSS based on an adaptation of Proppian morphological concept and to present a concepto-mathematical structural model of the AFSS. Instead of the thirty-one character functions postulated by Propp, the structural model presented in this paper has seven components made up of four character functions and three societal elements.

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**Corresponding Author:** Patricia Beatrice Mireku-Gyimah, Languages Section, University of Mines and Technology (UMaT), Tarkwa, Ghana. 80

Propp [12] studied one hundred Russian fairy tales from the Afanasyev collection [13] and came up with his *Morphology of the Folktale* (Propp's original work, came out in 1928 but the English version became available in 1958). Propp studied the Russian fairy tale story structure, using the botanical term "morphology" and discovered that the tale contained many characters that were variable but the situations and the characters' actions were constant. Following this finding, Propp went on to identify thirty-one character roles which he called "functions". He then used the letters of the alphabet and some Greek symbols to represent these functions. Propp believed that his method could apply to tales from other cultures and that the story structure of such tales could fit into his model.

Alan Dundes [14], a disciple of Propp, applied Propp's theory to some North American Indian tales and also some African tales [15] in a study which he titled "The Making and Breaking of Friendship as a Structural Frame in African Folklore". Denise Paulme [16, 17] is another scholar who applied Propp's methodology to African folktales (see *Le Garçon Travesti ou Joseph en Afrique* and *La Mère Dévorante: Essai sur la Morphologie des Contes Africains* respectively).

Despite the wide acclaim enjoyed by Propp's *Morphology*, there has been one major criticism against it. Essentially, this criticism has concerned the disregard for social context in Propp's work even though Dundes observed that by starting and ending the thirty-one functions with a family and a wedding respectively, Propp had already given a hint about Russian culture and the love for family.

The Akan Folktale Story (AFS) is observed to have a structure which cannot overlook social context. Thus, a wholesale adoption of Proppian morphology for the AFSS would be inappropriate, for there are some social elements in the opening and the concluding parts of the AFSS which are part and parcel of the genre and actually give the AF its identity. These elements appear implanted and linked to the Akan society and its cultural heritage. Logically, therefore, any structural model of the AFS must include societal elements so as to provide a full picture of what the AF truly is. Reference is made to Akan Folktales collected by the author from three Akan towns in the Ejisu-Juaben District of the Ashanti Region of Ghana as part of this study [18].

**The Concepto-Mathematical Structural Model for the Akan Folktale Story (AFS):** The discernible, logical general structural model for the AFS comprises a linear sequence of seven components (instead of Propp's thirty-one character functions). It consists of four character functions sandwiched between three societal elements which begin and end a story. A summary of the seven components in sequential order is given by the following concepto-mathematical model:

$$AFSS = S_{\circ} + F_{\circ} + F_{\S} + F_{\zeta} + F_{\ast} + S_{\S} + S_{\zeta}$$

Where

- S<sub>∘</sub> = Initial Circumstance (societal element),
- F<sub>∘</sub> = Exit (character function),
- F<sub>§</sub> = Encounter (character function),
- F<sub>ζ</sub> = Acquisition (character function),
- F<sub>\*</sub> = Application (character function),
- S<sub>§</sub> = Consequence (societal element),
- S<sub>ζ</sub> = Resolution (societal element); and, i = ", \$, ( and \*.

The characters (actants) involved in the model are four and are mainly the:

- C Protagonist {who is a hero i.e. Protagonist Hero (PH), or an anti-hero villain i.e. Protagonist Anti-Hero Villain (PA-HV)};
- C Antagonist (who is opponent of the Protagonist Hero), or the Real or Actual Hero (who is opponent of the Villain Imitator and/or the Protagonist Anti-Hero Villain (PA-HV), or another type of Villain).
- C Dupe/Victim (who is PA-HV's victim or a sufferer of a kind).
- C Dispatcher (who is a Sender or Contest Organiser).

The components have variants and the variants have options that bring out the detailed structure of the AFS as shown in Table 1. Following is a discussion of the individual structural components, the variants of the components, the options of the variants and how the components of the model in any AFSS can be written out completely.

**S. (Initial Circumstance):** Initial Circumstance deals with two main issues: first, introduction of the compelling circumstance (A) and second, introduction of the main characters (B). The compelling circumstance describes the prevailing conditions or state of affairs at the beginning of the story. It also presents the setting, both time and place and is the point of departure as it actually sets the stage for the action to start with the main character(s).

The compelling circumstance has three variants: Unsatisfactory State (US), Satisfactory State (SS) and Proving State (PS). The variant referred to as "Unsatisfactory State" is associated with a lack or deficiency and has five options which may be one of famine (1), poverty (2), spinsterhood (3) artificial lack due to greed (4) on the part of a character [the Protagonist Anti-Hero Villain (PA-HV), or the Villain Imitator (Antagonist: Opponent of Protagonist Hero)], or Other (5) difficult situations such as barrenness, sickness and death (and funeral). But this is not always so because the compelling circumstance may be the "Satisfactory State" variant, which is associated with normalcy- a normal, ordinary work or duty. Satisfactory State has four options: going to farm or hunt (1), a desire (e.g. to swim), a quest or an adventure (2), a celebration (such as a festival) (3), or even an errand (4). Apart from these, the compelling circumstance may be the "Proving State" variant and it has four options which describe what the "Proving State" may be associated with: a contest (1), a challenge (2), an assignment (3) or even a mission (4).

Table 1: The Components of the AFSS, Their Variants and The Options

**S. (Initial Circumstance)**

A. (Presentation of) Compelling Circumstance or State: Unsatisfactory State (US)/ Satisfactory State (SS) / Proving State (PS):

- C Unsatisfactory State (lack / deficiency; difficult situation): 1. famine/ 2. poverty/ 3. spinsterhood/ 4. artificial lack e.g. due to greed e.g. of the Protagonist Anti-Hero Villain (PA-HV)/ Villain Imitator / 5. Other (e.g. childlessness, sickness, death and funeral, etc.).
- C Satisfactory State (normal working time/duty): 1. going to farm/hunt/ 2. desire (e.g. to swim)/ 3. a celebration (e.g. festival)/ 4. an errand.
- C Proving State: 1. a contest/ 2. a challenge/ 3. an assignment / 4. a mission.

B. (Introduction of) Main Characters:

- C Protagonist: 1. Protagonist Hero 2. Protagonist Anti-Hero Villain (PA-HV) (and his/her family as well as his/her status in the family).
- C Antagonist: 1. Opponent of Protagonist Hero / 2. Villain Imitator / 3. (The Real or Actual Hero who is) Opponent of PA-HV or Other Villain.
- C Dispatcher: 1. Sender/ 2. Contest Organizer.
- C Dupe/Victim.

**F. (Exit)**

- A. Restricted Exit: With Interdiction/ Instruction/Message
- B. Unrestricted Exit: Without Interdiction/ Instruction/Message

**F<sub>s</sub> (Encounter)**

A. Encounter with Stranger a. Donor (Supernatural) / b. Helper (Non Supernatural) Being/Power/Force: a. human/ b. non human

1. With Restriction/ Instruction 2. Without Restriction/ Instruction

B. Encounter with Beneficiary: a. human/ b. non human

1. With Restriction/ Instruction / 2. Without Restriction/ Instruction

C. Encounter with Dupe/Victim: a. human/ b. non human

1. With Restriction/ Instruction/ 2. Without Restriction/ Instruction

D. Encounter with Villain/Cheat/Trickster : a. human/ b. non human

1. With Restriction/ Instruction/ 2. Without Restriction/ Instruction

E. Encounter with Opposition/Intermediary/Mediator: a. human/ b. non human

1. With Restriction/ Instruction/ 2. Without Restriction/ Instruction

**F<sub>ç</sub> (Acquisition)**

Of: A. Knowledge/ B. Experience/ C. Gift / D. Skill/ E. Power (and Wealth)/ F. Tool / G. Other (e.g. food, a loan etc.) (through deceit/artifice)

C With Interdiction / Instruction

C Without Interdiction / Instruction

**F. (Application)**

A. Positive (Direct Application) by: a. Protagonist Hero/ b. The Real or Actual Hero (who is Opponent of PA-HV or Other Villain) / c. Antagonist in Confrontation with Protagonist Hero or Other Villain / d. PA-HV

B. Negative (Indirect Application) by: a. Villain Imitator / b. Application by PA-HV/ c. Underdog

C. Strategy/ Strategic Plan (through deceit/artifice)

D. Violation of Interdiction/Instruction

**S<sub>s</sub> (Consequence)**

A. Success: a. Victory/ b. Gain/ c. Recognition / d. Safety / e. Revenge

1. Direct: a. of Protagonist Hero / b. Antagonist: Opponent of PA-HV or Other Villain/ c. PA-HV / d. Dupe/Victim

2. Indirect: (Brief) of Antagonist: a. Villain Imitator / b. PA-HV or Other Villain

B. Failure:

a. Exposure/ b. Humiliation/ c. Pursuit (and Escape) / d. Loss (e.g. of recognition/status or position and wealth/baby, etc.) / e. Death

**S<sub>ç</sub> (Resolution)**

A. Rewards: a. Prize Awards/ b. Gifts / c. Satisfaction (for the victorious character usually): 1. the Protagonist Hero/ 2. Real or Actual Hero (who is Opponent of the PA-HV or Other Villain)/ 3. PA-HV

B. Punishments: a. Downfall (and/or Disappointment) / b. Disgrace / c. Death / d. Other (for 1. Villain Imitator/ or 2. PA-HV/ or 3. Dupe/Victim)

C. Closure: a. Lesson (Moral; e.g. 1. Wit/ 2. Determination/ 3. Honesty/ 4. Selflessness/ 5. Others (e.g. greed, ingratitude, envy, jealousy, wickedness, foolishness; hardwork, gratitude, hospitality etc.);

C Affirmation: of 1. Cultural Belief / 2. Concept / 3. Observation (e.g. Aetiological tales or Explanation of Myths) through:

C Channel: 1. Restatement of Title/ 2. Statement of Lesson in Proverb/ 3. Conveying of Lesson/Moral through Song.

Apart from the Compelling Circumstance, the Initial Circumstance component also introduces the main character(s) of the story. The family members of the main character(s) as well as the status(es) or position(s) of the main character(s) may also be presented. The Introduction of the Main Characters (B) describes the main character(s) involved in the action which the compelling circumstance triggers. The variants of the characters may be the Protagonist (a), Antagonist (b), Dispatcher (c) Dupe or Victim (d). The Protagonist (a) has two options: Protagonist Hero (or Heroine) (1) and Protagonist Anti-Hero Villain (PA-HV) (2). The Antagonist (b) has three options: Opponent of the Protagonist Hero (or Heroine) (1), the Villain Imitator (2) (who is an Imitator of the Protagonist Hero/Heroine) and the Opponent of the PA-HV (3) (who is therefore the Real or Actual Hero). The Dispatcher (c) has two options: the Sender (1) and the Contest Organizer (2). Finally, there is the Dupe or Victim (d) who may also be a sufferer of a kind, that is, a vulnerable character. The Dupe or Victim has no options. Usually, the Protagonist/Hero or Heroine, or the Protagonist Anti-Hero Villain (PA-HV) starts the action that progresses the plot by exiting from home.

From the explanations of the variants of the Initial Circumstance component and the options of the variants (which are also summarised in Table 1), the detailed Initial Circumstance can be written out using the appropriate notations. For example, if the Initial Circumstance component of a tale story is given as  $S \cdot Aa_1Ba_2$ , it would be explained and ended with the story part indicated in brackets against it as: **S**·**Aa<sub>1</sub>Ba<sub>2</sub>**; **Initial Circumstance, S**·: (Presentation of: Compelling Circumstance or State (**A**): Unsatisfactory State (US) of Lack/Deficiency (**a**): famine (**1**); (Introduction of Main Character (**B**): Protagonist (**a**): PA-HV (**2**): Father Kwaku Ananse (KA) the Spider (and his hometown i.e. the setting: place as well as his status in his family as “Father”: i.e. Head of family and breadwinner). (A great famine once breaks out in Father KA’s hometown).

**F**· (**Exit**): Exit has two variants and no options. The variants are: Restricted Exit (A): With Interdiction/Instruction/Message and Unrestricted Exit (B): Without Interdiction/Instruction/Message. When the initial circumstance component has the compelling circumstance variant as US (a) or PS (c), it necessarily compels an exit or a movement of a character usually from home. Exit may be a free, unrestricted one with no interdiction, instruction or message, or it may be a restricted one with interdiction, instruction or message. The interdiction or instruction is usually ignored or violated – by a character(s) – and provokes serious consequences against him (them). In the variant SS, an exit from home is unrestricted and so there is no room for violation. Exit,  $F_4$  is the first function of the character and the second component in the concepto-mathematical structural model.

From the explanation of the variants of Exit (which are also summarised in Table 1), the detailed Exit can be written out using the appropriate notations. For example, if the Exit component of a tale story is given as  $F \cdot B$ , it would be explained and ended with the story part indicated in brackets against it as: **F**·**B**: **Exit, F**·: Unrestricted: Without Interdiction/Instruction/Message (**B**): (KA attends the funeral; his friends accompany him as custom demands).

**F<sub>5</sub> (Encounter)**: Following the exit, the character may meet a Stranger or a strange thing which may also be a benevolent or malevolent supernatural character (designated as “Donor”), or a non supernatural character (designated as “Helper”). This “Donor” or “Helper” may be human or non human and there may be or may not be an interdiction or instruction addressed to the character. Sometimes, however, the character may meet a Beneficiary, or the vulnerable one, that is, the Dupe or Victim, or a Villain such as a cheat or trickster. Or the character (who is a Villain) may meet with Opposition (who is an Intermediary or Mediator against Villain). Like the Donor and the Helper, these may also be human or non human.

And in each case there may be or may not be an interdiction or instruction addressed to the main character.

There are five variants of Encounter with a human or non human character, with or without Restriction or Instruction addressed to the main character. The first variant is Encounter with a Stranger (A) which has two options: Donor (a) (who is a supernatural being/power/force) and Helper (b) (who is a Non Supernatural being/power/force). The remaining four variants are: Encounter with Beneficiary (B), Encounter with Dupe or Victim (C), Encounter with Villain/Cheat/Trickster (D) and Encounter with Opposition/Intermediary/Mediator (E). These have no options. In all five cases, Encounter with Restriction or Instruction is (a) and Encounter without Restriction/Instruction is (b) while Encounter with a human is (1) and Encounter with a non-human character is (2). Encounter,  $F_a$ , is the second function of the character and the third component in the suggested concepto-mathematical structural model.

From the explanation of the variants and options, etc. of Encounter (which are also summarised in Table 1), the detailed Encounter can be written out using the appropriate notations. For example, if the Encounter component of a tale story is given as  $F_s A a b_1$ , it would be explained and ended with the story part indicated in brackets against it as:  **$F_s A a b_1$ : Encounter,  $F_s$ , with Stranger (A): Donor (a) (supernatural being/power/force): non human (b); with restriction/instruction (1).** (He meets dwarfs by accident; they offer him boxes as gifts but address a restriction/an instruction to him).

**$F_c$  (Acquisition):** The Encounter enables the Acquisition of something pleasant or unpleasant by the character. The pleasant “acquisition” may come in the form of knowledge, an experience, a gift, a skill or power and wealth with or without interdiction (or restriction). Unpleasant “acquisition” includes infliction of pain (as punishment) or even death. Acquisition may also refer to the time to acquire specific resources such as a tool or a weapon to undertake an assignment. It may also be the acquisition of something else (designated as “Other”), for example, food, a loan, a baby, etc. Deceit or artifice may be used in the acquisition of something and there may be or may not be an interdiction or instruction addressed to the character.

There are seven variants of Acquisition as a component. These are: Acquisition of: Knowledge (A), Experience (B), Gift (C), Skill (D), Power (and Wealth) (E), Tool (F) and Other (G) (e.g. food, a loan, etc.). All the variants of Acquisition have two options: (Acquisition) With Interdiction or Instruction (a), or (Acquisition) Without Interdiction or Instruction (b). Acquisition,  $F_c$ , is the third function of the character and the fourth component in the suggested concepto-mathematical structural model.

From the explanation of the variants and options of Acquisition (which are also summarised in Table 1), the detailed Acquisition can be written out using the appropriate notations. For example, if the Acquisition component of a tale story is given as  $F_c B C a$ , it would be explained and shown in brackets against it as:  **$F_c B C a$ : Acquisition,  $F_c$ , of Experience (B) and Gifts (C); with interdiction/instruction (a).** (He dialogues with the dwarfs and makes a request in order to overcome his poverty and that of his friend back home; he is offered two boxes but instructed not to open them until the third day).

**F. (Application):** The Application is the use of what has been acquired: knowledge, experience, skill, riches and power, a tool, etc. It may be positive (designated as “Direct” Application) as per the Protagonist Hero or the Antagonist (Real or Actual Hero) opposing the Protagonist Anti-Hero Villain (PA-HV). It may also be negative (designated as “Indirect” Application) as per the Villain Imitator, the PA-HV or any other villain, or the Underdog. Application may or may not involve Strategy (or Strategic plan), that is, the use of deceit or artifice and or Violation of Interdiction, that is, flouting of a rule or instruction, etc. Application may be repeated several times with the same results as “brief” success for the Villain before the final episode leading to the Consequence where the Villain will be defeated finally. Such Application and Consequence appear to follow in a sequence and present the same structural pattern each time before the introduction of the final episode ending the tale story as a whole. A binary relationship between Application and Consequence and the repetitive pattern they generate lengthen the tale and create “moves” (moves are explained later).

Application has four variants. Two of them describe the type of Application made by the character: Positive (i.e. Direct Application) (A) and Negative (i.e. Indirect Application) (B). Positive Application has four options which describe the character in question who may be the: Protagonist Hero (a) The Real or Actual Hero (b) (who is Opponent of PA-HV or Other Villain), Antagonist © in Confrontation with Protagonist Hero or Other Villain, or PA-HV (d).

Negative Application has three options that show the character applying what has been acquired, that is, by the: Villain Imitator (a), PA-HV (b), or Underdog (c). The two other variants of Application describe the use of Strategy (C) and or a Violation of Interdiction or Instruction (D).

From the explanation of the variants and options of Application (which are also summarised in Table 1), the detailed Application can be written out using the appropriate notations. For example, if the Application component of a tale story is given as F.Aa, it would be explained and ended with the story part indicated in brackets against it as: **F.Aa: Application, F.: (A) Positive (Direct Application) by: (a) Protagonist Hero. (He obeys the instruction and opens the boxes only on the third day).**

**S<sub>3</sub> (Consequence):** Consequence refers to the outcome of the application of what has been acquired by the character. The consequence may be a success or a failure. Success is achieved when the desired goal of the character is fulfilled, so success may be a subjective term. It may involve a victory, gain, recognition, safety or ability to take revenge. In the case of failure, the opposite is the case and it may involve exposure, humiliation, pursuit and escape, loss of recognition, status and wealth, death or even a combination of some of these. Success is direct for the Protagonist Hero and the Antagonist opposing the PA-HV while it is indirect when it is only brief or temporal usually for the Antagonist who is Villain Imitator or the PA-HV. In some cases, however, success is direct for the PA-HV (e.g. Ananse the Spider) when there is no punishment for misdeeds. Thus success entails rewards whereas failure entails punishments. Success and failure are judged according to good morals, based on local, cultural perception. As previously mentioned, Consequence follows Application, but Application is often absent where there is no Acquisition.

Consequence has two variants: Success (A) and Failure (B). Success has five options: Victory (a) Gain (b) Recognition (c) Safety (d) and Revenge (e) and describe the type of achievement which may occur just once (Direct) (1), or several times (Indirect) (2). Direct Success has four options and shows the successful character, who may be the: Protagonist Hero (a), Antagonist (b) who is Opponent of PA-HV or Other Villain, PA-HV (c), or the Dupe/Victim (d). Indirect Success has two options and shows the character experiencing several successes, but is eventually going to fail, that is, the: Villain Imitator (a) and PA-HV or Other Villain (b). Failure (B) as a variant of Consequence has five options: Exposure (a), Humiliation (b), Pursuit (and Escape) (c), Loss (d) (e.g. of recognition/status or position and wealth/baby, etc.) and Death (e). Consequence, S<sub>3</sub>, is the second societal element and the sixth or the penultimate structural component in the concepto-mathematical structural model.

From the explanation of the variants and options of Consequence (which are also summarised in Table 1), the detailed Consequence can be written out using the appropriate notations. For example, if the Consequence component of a tale story is given as S<sub>3</sub>Ab<sub>1</sub>a, it would be explained and ended with the story part shown in brackets against it as: **S<sub>3</sub>Ab<sub>1</sub>a: Consequence, S<sub>3</sub>: Success: (A) Gain (b) Direct (1); of Protagonist Hero (a). (Hunter opens the two boxes to find money; he acquires wealth for himself and for his friend).**

**S<sub>4</sub> (Resolution):** The Resolution is the terminal point showing that the tale has completely ended and that any conflicts have been resolved. The Resolution involves Rewards, Punishments and Closure. The rewards include honours and awards for the victorious character, who is usually the Protagonist Hero/Heroine, or the Opponent of the PA-HV or of another kind of villain. (This opponent is the Real or Actual Hero). The punishments include downfall (and disappointment), disgrace and sometimes death for the Villain who may also be the Imitator or the PA-HV. The resolution as closure is the final societal element and it directly or indirectly hints at a moral or didactic lesson. It may restate the title as an affirmation of a cultural belief, a concept, an observation (especially of etiological tale stories explaining myths), or the general worldview of the people. Also, it condemns a wrongdoing and negates an immoral topical issue. What is to be affirmed, for example, a cultural belief, a concept or an observation of what is thought to be true about the universe, according to the people's cosmology, [that is, what Kyerematen [19] suggests to be the "knowledge or ideas about creation and the universe" (107)] and may also be spoken as a restatement of the title, given as a proverb, or sung as a song.

The lesson is to the audience and it is channelled through the success or failure of the character in relation to his or her actions, behaviour, comportment, etc. It is what is taught to the audience as the outcome of the totality of decisions taken and consequent actions performed by the character in the course of the story, that is, as the plot progresses. The resolution or closure is given as a kind of summary.

Resolution has three variants: Rewards (A), Punishments (B) and Closure (C). Rewards (A) has three options: Prize Awards (a) Gifts (b) Satisfaction (c) (for the victorious character usually). Three character types may be victorious and are the: Protagonist Hero (1), Real or Actual Hero (2) (who is Opponent of the PA-HV or Other Villain) and the PA-HV (3). The second variant, Punishments (B), has four options: Downfall (and/or Disappointment) (a), Disgrace (b), Death (c), or Other (d). Three character types may be punished: the Villain Imitator (1), PA-HV (2), or Dupe/Victim (3). The third and last variant, Closure (C), has three options: Lesson or Moral (a), Affirmation (b) and Channel (c). Lesson or Moral (a) has five options: Wit (1), Determination (2), Honesty (3), Selflessness (4) and Others (5). ("Others" refers to subjects such as greed, ingratitude, envy, jealousy, wickedness, foolishness; hardwork, gratitude, hospitality, etc.). Affirmation (b) has three options: (Affirmation of) Cultural Belief (1), Concept (2) and or Observation (3) (e.g. Aetiological tale stories or Explanation of Myths). Channel (c) has three options: Restatement of Title (1), Statement of Lesson in Proverb (2) and or Conveying of Lesson/Moral through Song (3). Resolution, Sā, is the third and last societal element as well as the last component in the suggested concepto-mathematical structural model for the AFS.

From the explanation of the variants and options of Resolution (which are also summarised in Table 1), the detailed Resolution can be written out using the appropriate notations. For example, if the Resolution component of a tale story is given as  $S_{\zeta}Ab_1Ca_{345}b_2$ , it would be explained and ended with the story part written in brackets against it as: **S<sub>ζ</sub>Ab<sub>1</sub>Ca<sub>345</sub>b<sub>2</sub>, Resolution, S<sub>ζ</sub>**: Rewards (A): Gift (b) for: Protagonist Hero (and his friend) (1); Closure (C): Lesson/Moral (a): (3) Honesty, (4) Selflessness (5) Others: e.g. obedience; Affirmation (b) of: Concept (2) e.g. "Obedience brings rewards".

**Moves, Repetitions, Implied Elements and Their Notations:** The concepto-mathematical structural model for the AFS also takes care of moves, repetitions and implied elements occurring in the AFS, which are explained in this section.

**Moves:** In the AFSS, there can be move(s). A move is a micro tale story within a main one and is similar to Propp's *xod*. Thus a move is a short tale story forming part of a main tale story, yet can stand alone as a complete tale story. Generally, moves serve as a tool to weave the complex plot of a tale into form.

In the AFSS, moves are joined together by the linking method of concatenation, that is, the chaining together of basic patterns. The two or more moves of a tale story thus linked may have a common Resolution  $S_{\zeta}$  and this normally comes at the end of the last or final move. Sometimes, however, each move of a tale story may have its own Resolution  $S_{\zeta}$ .

In the concepto-mathematical structural model, when there is more than one move, these moves are placed in brackets ( ) as a notation for ease of identification. Like a main tale story, a move may comprise all seven components of the model and so annotated as:  $(S_{\zeta} + F_{\zeta} + F_{\zeta} + F_{\zeta} + F_{\zeta} + S_{\zeta} + S_{\zeta})$ , or it may consist of only some of them and so annotated as, for example,  $(S_{\zeta} + F_{\zeta} + F_{\zeta} + F_{\zeta})$ .

**Repetitions:** In the AFSS, there can be disjointed or contiguous repetition of a move, or a cluster of components which does not necessarily constitute a move, or even a single component. Generally, repetitions serve as a tool to give emphasis to a move, a cluster of components, or a single component in order to underscore their importance in the plot of the tale story. They also serve to introduce variety and break monotony while creating suspense to sustain audience interest.

In our concepto-mathematical structural model, disjointed repetitions are not tampered with but, in order to smarten the model, the contiguous repetitions are given the notation:  $R_i\{W\}$ , where W is whatever is repeated and  $i = 1, 2, 3 \dots n$ , i.e. the definite number W is repeated. Therefore the notation  $R_n\{W\}$  means W is repeated indefinite times (n). For example,  $R_2\{(S_{\zeta} + F_{\zeta} + F_{\zeta} + F_{\zeta} + F_{\zeta} + S_{\zeta} + S_{\zeta})\}$  would mean that a move is contiguously repeated twice,  $R_n\{F_{\zeta} + F_{\zeta}\}$  would mean that a



cluster of components (which are character functions Acquisition and Encounter) is contiguously repeated indefinitely and  $R_3\{F_3\}$  would mean that a single component which is a character function, Encounter, is contiguously repeated three times.

**Implied Elements:** In the AFSS, there can be implied element(s). An implied element is one which is not explicitly stated in the tale story but can be implied. For example, if in a tale story, a villain kills his/her neighbours by giving them poisoned food and this villain eventually dies by eating some of the poisoned food, then under Closure in the Resolution, S(, Affirmation of concept, is assured through a statement such as “He who kills others by poisoning them will also die through poisoning”. Even if such a statement is not explicitly stated it will be clearly implied (see Affirmation (b) of Concept (2) part of the Resolution Sā in Table 1). When obvious elements are not explicitly stated in a tale story, the members of the audience are aroused and invited to draw their own conclusions.

**Illustrations: The Concepto-Mathematical Structural Model Applied:** After analysing over 50 Akan Folktale Stories as part of this study, it was discovered that there are three main types of moves: single, double and triple (or one-move, two-move and three-move respectively), but single-move tale stories were the most prevalent. Out of the corpus of 50 tales analysed, there were as many as 41 single-move, eight (8) double-move and only one (1) triple-move tale stories. It is therefore concluded that the majority of Akan Folktales are single-move tale stories. For lack of space, an example each of the single, double and triple-move stories is analysed here to illustrate how they fit into the general concepto-mathematical structural model presented in this paper.

**Example of Akan Folktale with Single-Move Story: “Why Kwaku Ananse the Spider Is Bald”:** The story contained in this Akan Folktale is as follows: Kwaku Ananse (KA) loses the mother-in-law and travels to attend the funeral, whose grandeur he contributes to by hiring a traditional *kete* orchestra to play as a side attraction. His friends come over to mourn with him over the big loss, as is usual. In an attempt to impress, he refuses to eat long after the mourning and funeral periods are over; he does not heed any advice to eat some food and continues to starve himself until well after the fortieth day celebrations. When he has become very weak with hunger, he enters the house of his in-laws where he is lodging and gets attracted to some boiling beans stew in the kitchen. He steals some of the steaming hot stew into his hat. On hearing the sound of approaching footsteps, he quickly wears the hat containing the hot beans and gets his scalp badly scalded. Then KA devises a plan to cool his head by vigorously shaking his head and claiming there is a hat-shaking festival back in his father’s hometown, which he must attend without any delay. Therefore, he is unable to stay one more night as the father-in-law would like him to do. In fact, KA says that he is so hard-pressed for time that he cannot even allow the father-in-law to escort him on the way as custom demands. While giving excuses and shaking his head all along, the hat falls down and the beans stew together with KA’s scalded head are exposed in the presence of his in-laws. KA is thus disgraced beyond measure, so he escapes to hide in the cobweb. This is why KA is bald and lives in cobwebs and tries to hide on seeing human beings.

This Tale Story Has Only One Move. The Details Are as Follows:

- S-Aa<sub>5</sub>Ba<sub>2</sub>: Initial Circumstance: Unsatisfactory State (Aa): Other (5): death and funeral; Ba<sub>2</sub>: PA-HV Kwaku Ananse (KA). (KA loses the mother-in-law and helps to organize a grand funeral; then he indulges in excessive grief much against custom);
- +F.B: Exit: (Unrestricted) (B): (KA attends the funeral; his friends accompany him as custom demands);
- +F(BAb: Acquisition of Experience (B) and Knowledge (A); without restriction (b). (KA refuses to eat after the mourning period is over; he becomes extremely hungry; he is begged to eat but he is still recalcitrant; then he enters the house to find the boiling beans stew);

- +F.BbC: Application: Negative (Indirect) (B); by PA-HV (b); with Strategy (C). (He steals some of the hot beans into his hat and wears it; then, unceremoniously, he insists he must leave at once for his own village for a hat-shaking festival while he shakes his head but only for comfort);
- +S<sub>5</sub>Bab: Consequence: Failure (B): Exposure (a) and humiliation (b). (The hat falls and the scalded head of Ananse together with the stolen beans is exposed);
- +S<sub>7</sub>(Bb<sub>2</sub>Ca<sub>3</sub>b<sub>3</sub>c<sub>1</sub>): Resolution: Punishment (B): disgrace (b); for: the PA-HV (2); Closure: Lesson/Moral (Ca): (5) Others: e.g. overambition, arrogance, show-off; Affirmation (b) of Observation (3): “Why Kwaku Ananse is bald” (... lives in cobwebs and tries to hide when “he” sees human beings), through (c): Restatement of title (1): “That is why you Ananse is bald ...”.

This is the end of the first and last move. Therefore the complete concepto-mathematical structural model of AFS 1 is: S<sub>7</sub>Aa<sub>3</sub>Ba<sub>2</sub>+F<sub>7</sub>B+F<sub>7</sub>BAb+F<sub>7</sub>BbC+S<sub>5</sub>Bab+S<sub>7</sub>(Bb<sub>2</sub>Ca<sub>3</sub>b<sub>3</sub>c<sub>1</sub>). F<sub>5</sub> (Encounter) does not appear at all.

**Example of Akan Folktale with Double-Move Story: “Greed for Money goes Hand-in-Hand with Death”:** The story contained in this Akan Folktale is as follows: Once, a very poor Hunter living in a poverty-ridden village decides to go hunting as a way of improving upon his economic status. He leaves for the forest but gets missing in the thick forest. While groping for the way back home, he meets dwarfs in the forest by chance. The dwarfs ask him to make a wish, which he does and gets a box as a gift from them. He goes on to request for and gets a separate box for his friend back home, another poor man. Hunter is however instructed to open the two boxes at home only on the third day and he obeys them. Hunter brings the boxes home. On the third day, Hunter opens the boxes to find a lot of money in each box for himself and also for his friend, but the box meant for Hunter contained more money than that meant for his friend. Hunter brings the friend’s box and the money to him intact, yet his friend becomes unhappy and is ungrateful. Dissatisfied, The Man, Hunter’s friend, determines to go on his own expedition into the forest, where he would conjure a miracle box for himself exactly like Hunter’s, disregarding Hunter’s admonishments not to go on the quest. Then, while in the forest, he devises methods of inducing and, indeed, precipitating events to simulate the experience of his friend, the Hunter. First, he pretends to be lost in the jungle and he meets the dwarfs all right. Then he hurries them into asking him to make a wish; he asks for something to overcome his poverty but emphasises that it must be as valuable as they offered the Hunter previously. The dwarfs offer him a box but like the Hunter, he is also instructed to take the box home and open it only on the third day. However, The Man becomes impatient soon after leaving the forest and attempts to open the box before the third day saying to himself that he needs the money urgently. In the attempt to open the box earlier than instructed, however, his arm gets stuck in the box, permanently. Sooner than later, he dies.

There are two moves in this tale. The details are as follows:

### **First Move**

- S<sub>7</sub>Aa<sub>2</sub>Ba<sub>1</sub>: Initial Circumstance: Presentation of Compelling Circumstance or State (A): Unsatisfactory State of Lack: (a) poverty (2); Introduction of Main Character (B): Protagonist (a): Protagonist Hero (1): Hunter. (Hunter is poor and wants to go hunting to improve upon his economic status);
- +F<sub>7</sub>.B: Exit (Unrestricted) (B): (He leaves for the forest);
- +F<sub>5</sub>Aab<sub>1</sub>: Encounter with Stranger (A): Donor (a) (supernatural being/power): non human (b); with restriction/instruction (1). (He meets dwarfs by accident; he requests for something to overcome his poverty and that of his friend back home and is offered two boxes by the dwarfs, but they instruct him to open the boxes only on the third day);

- +F<sub>7</sub>BCa: Acquisition of Experience (B) and Gifts (C); with interdiction/instruction (a). (He acquires two boxes, one for himself and one his friend with instruction to open them on the third day);
- +F<sub>7</sub>.Aa: Application: (A) Positive (Direct) by (a) PH. (He obeys the instruction and opens the boxes only on the third day);
- +S<sub>5</sub>Ab<sub>1</sub>a: Consequence: Success: (A) Gain (b) Direct (1); of Protagonist Hero (a). (Hunter opens the two boxes to find money; he acquires wealth for himself and his friend);
- +S<sub>7</sub>Ab<sub>1</sub>Ca<sub>345</sub>b<sub>2</sub>: Resolution: Rewards (A): Gift (b) for: PH (and his friend) (1); Closure: Lesson/Moral (Ca): (3) Honesty, (4) Selflessness (5) Other: e.g. obedience; Affirmation (b) of: Concept (2) e.g. "Obedience brings rewards".

This is the end of the first move and the tale could have ended here. However, it continues. The summary of the first move structure is:

S<sub>7</sub>.Aa<sub>2</sub>Ba<sub>1</sub>+F<sub>7</sub>.B+F<sub>5</sub>Aab<sub>1</sub>+F<sub>7</sub>BCa+F<sub>7</sub>.Aa+S<sub>5</sub>Ab<sub>1</sub>a+S<sub>7</sub>Ab<sub>1</sub>Ca<sub>345</sub>b<sub>2</sub>.

### Second Move:

- S<sub>7</sub>.Aa<sub>4</sub>Bb<sub>2</sub>: Initial Circumstance: Presentation of Compelling Circumstance (A): Unsatisfactory State (a): Artificial Lack - poverty due to greed (4) of: Introduction to Main Character (B); Antagonist (b): Villain Imitator (Hunter's friend) (2). (Introduction of Antagonist: Villain Imitator); (Hunter's friend - The Man - dissatisfied with the amount of money he gets, determines to go on a quest for more money for himself);
- +F<sub>7</sub>.A: Exit (Restricted) (A). (He leaves for the forest disregarding Hunter's admonishment not to go);
- +F<sub>5</sub>Aab<sub>1</sub>: Encounter with Stranger (A): Donor (supernatural being/power) (a); non human (b); with interdiction/instruction (1). (He meets the dwarfs after pretending to be lost);
- +F<sub>7</sub>BCa: Acquisition of Experience (B) and Gift (C); with interdiction/instruction (a). (The dwarfs ask him to make a wish and he requests for something to overcome his poverty insisting that it must be as valuable as they offered Hunter previously; he is given a box and also instructed to open it only on the third day);
- +F<sub>7</sub>.BaD: Application: Negative (Indirect) (B): by Villain Imitator (a) with Violation of Interdiction (D). (He disobeys the instruction and tries to open the box before the third day);
- +S<sub>5</sub>Bbe: Consequence: Failure (B); Humiliation (b) and Death (e). (His arm becomes stuck in the box and he dies later).
- +S<sub>7</sub>Bbc<sub>1</sub>Ca<sub>5</sub>b<sub>2</sub>c<sub>1</sub>: Resolution: Punishments (B); Disgrace (b) and Death (c) for the Villain Imitator (1); Closure: Lesson/Moral (Ca): (5) Other e.g. greed, deception; Affirmation (b) of Concept (2) e.g. "Greed moves closely with Death", through (c): Restatement of title (1): "Greed goes hand-in-hand with Death".

This is the end of the second move bringing the tale story to an end. The summary of the second move structure is:

S<sub>7</sub>.Aa<sub>4</sub>Bb<sub>2</sub>+F<sub>7</sub>.A+F<sub>5</sub>Aab<sub>1</sub>+F<sub>7</sub>BCa+F<sub>7</sub>.BaD+S<sub>5</sub>Bbe+S<sub>7</sub>Bbc<sub>1</sub>Ca<sub>5</sub>b<sub>2</sub>c<sub>1</sub>.

Therefore the complete concepto-mathematical structural model for the whole of AFS 2 is:

(S<sub>7</sub>.Aa<sub>2</sub>Ba<sub>1</sub>+F<sub>7</sub>.B+F<sub>5</sub>Aab<sub>1</sub>+F<sub>7</sub>BCa+F<sub>7</sub>.Aa+S<sub>5</sub>Ab<sub>1</sub>a+S<sub>7</sub>Ab<sub>1</sub>Ca<sub>345</sub>b<sub>2</sub>)+

(S<sub>7</sub>.Aa<sub>4</sub>Bb<sub>2</sub>+F<sub>7</sub>.A+F<sub>5</sub>Aab<sub>1</sub>+F<sub>7</sub>BCa+F<sub>7</sub>.BaD+S<sub>5</sub>Bbe+S<sub>7</sub>Bbc<sub>1</sub>Ca<sub>5</sub>b<sub>2</sub>c<sub>1</sub>).

**Example of Akan Folktale with Triple-Move Story: "It Does Not Pay To Be So Greedy":** The story contained in this Akan Folktale is as follows: One day, in the hometown of Father Kwaku Ananse (KA), a great famine compels all animals in the animal kingdom to go and hunt for food. KA also goes into the forest to search for food to feed himself and his family. He comes across a very strange stone that has two eyes, eyelashes and a beard. When he expresses surprise by exclaiming at the stone's weird-looking features, he is immediately hurled down with a thud and he discovers that the stone

has strange powers. Moving away from the site of the strange stone, KA meets and lures Father Duiker, the first victim, to the strange stone, where Duiker, bewildered on seeing the weird stone, quickly exclaims surprise. Father Duiker is hurled down and he dies instantly. KA discovers further that the strange stone can kill. So after dragging the carcass of Duiker home for food, KA returns, meets Father Bull and traps him the same way. He drags Bull's carcass away to enjoy as food with his family. Out of greed, KA comes back again and again tricking, trapping and enjoying his neighbours' carcasses as food, that is, the animals he keeps on killing. He continues that way until almost all animals finish in the forest. Meanwhile, Father Opuro the Squirrel, having watched the trickery of KA in killing the animals, contrives a simple plan to stop KA from killing the animals further. He accompanies KA to the strange stone but, in spite of Ananse's serious promptings, Squirrel feigns stupidity by pretending not to know what to do. In KA's anger and extreme desire to get Squirrel also killed for his next tasty soup, he forgets himself and demonstrates to Squirrel how to exclaim surprise about the strange features of the stone: KA exclaims "what a strange stone sporting two eyes, eyelashes and a beard". Unfortunately, this demonstration and forgetfulness cost KA his life, for immediately he expresses surprise about the strange features of the stone, he is thrust down and he dies.

There are three moves in this tale story. The details are as follows:

### **First Move**

- S-.Aa<sub>1</sub>Ba<sub>2</sub>: Initial Circumstance: Compelling Circumstance or State (A) Unsatisfactory State (US) of Lack/Deficiency (a): famine (1); Introduction of Main Character (B): Protagonist (a): PA-HV (2): Father Kwaku Ananse (KA) the Spider, his hometown (i.e. the setting: place) and his status in his family i.e. "Father": KA is Head of family and breadwinner). (A great famine once breaks out in Father KA's hometown);
- +F.B: Exit: Unrestricted (B). (KA decides to go into the forest; in search of food to feed himself and his family);
- +F<sub>§</sub>Aab<sub>2</sub>: Encounter with Donor (supernatural being/power/force) (Aa); non human (geo-feature) (b); Without restriction/instruction (2). (KA comes across a strange stone with eyes, eyelashes and a beard; he expresses surprise and suffers a disastrous consequence by the power of the stone which hurls him down with a thud, but he does not die);
- +F<sub>∩</sub>Bb: Acquisition of Experience (B); without interdiction/instruction (b). (He experiences the mysterious, evil power of the strange stone and decides to experiment with the effectiveness of the power of the stone);
- +F<sub>§</sub>Cb<sub>2</sub>: Encounter with Dupe (C), non human (b); without restriction (2). (Moving away from the site of the strange stone, KA meets Duiker, the first victim);
- +F.BbC: Application: Negative (Indirect) Application (B): by PA-HV (b); with Strategy (C). (KA manages to trick Duiker into going to see the strange stone; there, Duiker shouts his surprise as a matter of course immediately he discovers the strange stone and he dies instantly; KA becomes aware that the stone can even kill);
- +S<sub>§</sub>Ab<sub>2</sub>b: Consequence: Success (A): Gain (b); (Indirect/Brief) (2) of: PA-HV (b). (KA drags Duiker's carcass home to enjoy with his family as food).

This is the end of the first move and the tale could have ended here. The summary of the first move structure is: S-.Aa<sub>1</sub>Ba<sub>2</sub>+F.B+F<sub>§</sub>Aab<sub>2</sub>+F<sub>∩</sub>Bb+F<sub>§</sub>Cb<sub>2</sub>+F.BbC+S<sub>§</sub>Ab<sub>2</sub>b.  
F<sub>§</sub> (Encounter) appears twice.

### **Second Move**

- S-.Aa<sub>4</sub>Ba<sub>2</sub>: Initial Circumstance: Unsatisfactory State (US) of Lack/Deficiency (Aa): created out of greed (4); Father Kwaku Ananse (KA) is still PA-HV: Ba<sub>2</sub>. (KA is unsatisfied and comes back from home to try his luck again...);
- +F.B: Exit (Unrestricted) (B). (He leaves home again desiring to find another animal for food- after dragging the carcass of Duiker away for food);

- +F<sub>3</sub>Cb<sub>2</sub>: Encounter: with Dupe (C); non human (b), without restriction/instruction (2): (He meets the next victim, Father Bull and then others, one after the other).
- +F<sub>7</sub>ABb: Acquisition: of Knowledge (A) in addition to his former Experience (B); without interdiction/ instruction (b). (He now knows for sure that the strange stone can kill anyone who expresses surprise at its strange features);
- +F<sub>7</sub>BbC: Application: Negative (Indirect) (B) by: PA-HV (b); with strategy, artifice, plan (C). (KA applies his acquired knowledge and experience and tactfully engages Bull also in a dialogue; he manages to trick Bull into going to see the strange stone so that he would exclaim surprise and die. There, Bull shouts his surprise as a matter of course immediately he sees the strange stone and, like Duiker, dies as a result of the power of the stone which hurls him down, fatally). (He does the same thing to the other animals after Bull, killing them in turns).
- +S<sub>5</sub>Ab<sub>2</sub>b: Consequence: Success (A) Gain (b); Indirect/Brief (2); of PA-HV (b). (KA drags Bull's carcass home to enjoy with his family as food. He does the same with the next victims).

This is the end of the second move and the tale could have ended here, but this move is contiguously repeated indefinitely until the last move comes with the arrival of Squirrel, the Antagonist (Real/Actual Hero who is opponent of PA-HV), which spells out the death of KA, the Protagonist Anti-Hero Villain (PA-HV). Therefore the summary of the second move structure is:  $R_n\{(S\cdot Aa_4Ba_2+F\cdot B+F_3Cb_2+F_7ABb+F\cdot BbC+S_5Ab_2b)\}$ .

### Third/Final Move

- S<sub>1</sub>·Aa<sub>4</sub>Ba<sub>2</sub>: Initial Circumstance: Unsatisfactory State: (Aa); Artificial Lack - created out of greed (4) of: PA-HV (Ba<sub>2</sub>). (KA comes back from home...);
- +F<sub>1</sub>·B: Exit without restriction (B) (KA leaves home again after dragging his last victim away for food);
- +F<sub>3</sub>Eb<sub>2</sub>: Encounter with Opposition (E): Antagonist Squirrel who is Real/Actual Hero, Opponent of PA-HV; non human (b); without interdiction (2). (He meets Squirrel who has learnt KA's tricks and is determined to stop him from killing any more animals).
- +F<sub>7</sub>BbC: Application: Negative (Indirect) (B) by: PA-HV (b); with strategy, artifice, plan (C). (KA applies his already acquired Knowledge (A) and Experience and starts his trick on Squirrel; he manages to lead him to the site of the strange stone but cannot get Squirrel to express surprise because Squirrel pretends to be so stupid that he cannot say or even repeat the killer words after KA; KA tries hard to teach Squirrel what to do but forgetfully exclaims "what a strange stone..."; KA is hurled down and he dies);
- +S<sub>5</sub>Bbe: Consequence: Failure (B): death (e) of: PA-HV. (KA fails; he dies);
- +S<sub>7</sub>(Bc<sub>2</sub>Ca<sub>3</sub>b<sub>2</sub>c<sub>1</sub>): Resolution: Punishment (B); death (c) of PA-HV (2). (KA dies); Closure: Lesson/Moral (Ca): Other (5) e.g. greed, deception etc.; Affirmation (b): of Concept (2): e.g. "Greed is bad", etc.; through (c) Restatement of title (1): "It Does Not Pay To Be So Greedy".

This is the end of the third and final move bringing the tale story to an end. The summary of the third/final move is:  $S\cdot Aa_4Ba_2+F\cdot B+F_3Eb_2+F_7ABb+F\cdot BbC+S_5Be+S_7(Bc_2Ca_3b_2c_1)$

There is no F<sub>7</sub> (Acquisition). Therefore the complete concepto-mathematical structural model for AFS 3 is:

$$(S\cdot Aa_4Ba_2+F\cdot B+F_3Aab_2+F_7Bb+F_3Cb_2+F\cdot BbC+S_5Ab_2b) + R_n\{(S\cdot Aa_4Ba_2+F\cdot B+F_3Cb_2+F_7ABb+F\cdot BbC+S_5Ab_2b)\} + (S\cdot Aa_4Ba_2+F\cdot B+F_3Eb_2+F\cdot BbC+S_5Be+S_7(Bc_2Ca_3b_2c_1)).$$

## CONCLUSION

This paper has sought to study the structure of the Akan Folktale Story (AFS) and consequently presented a concepto-mathematical structural model for the AFS. The model comprises seven components, which occur in the following linear sequential order in the Akan Folktale Story Structure (AFSS): Initial Circumstance ( $S_{\circ}$ ), Exit ( $F_{\circ}$ ), Encounter ( $F_{\xi}$ ), Acquisition ( $F_{\zeta}$ ), Application ( $F_{\cdot}$ ), Consequence ( $S_{\xi}$ ) and Resolution ( $S_{\zeta}$ ). The concepto-mathematical structural model is thus presented as:

$$\text{AFSS} = S_{\circ} + F_{\circ} + F_{\xi} + F_{\zeta} + F_{\cdot} + S_{\xi} + S_{\zeta}$$

Three of the components, namely Initial Circumstance, Consequence and Resolution are societal elements accounting for the cultural touch inherent in the AFS while the remaining four components, namely Exit, Encounter, Acquisition and Application are character functions that capture the roles of various characters in the AFS. The study reveals that the AFS has a single-move, double-move or triple-move story structure; that no matter the type of move, the AFS contains all or some of the components occurring in the same sequential order and that a component or cluster of them may be repeated. After analysing fifty Akan Folktale stories collected from Ejisu-Juaben District in Ashanti Region of Ghana, it is concluded that every AFS fits perfectly in the concepto-mathematical structural model presented in this paper. The model brings to the fore a hitherto unexplored literary dimension of the Akan Folktale, underscoring its inherent beauty.

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