

Discourse Patterns in Selected Science-Based Postgraduate Theses' Abstracts

Sade Olagunju^{[a],*}

^[a]PhD, English Unit, Department of General Studies, Ladoko Akintola University of Technology, Ogbomoso, Nigeria.

* Corresponding author.

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Abstract

The paper identified and analysed patterns of discourse thematic progression (TP) in Science-Based postgraduate theses abstracts in selected universities in Southwestern Nigeria. It described the linguistic realization of TPs across the identified four motifs of text such as introduction, methodology, findings and conclusion and also discussed the content of texts via the functional categories of texts. One hundred and fifty PhD theses abstracts out of six hundred and three abstracts produced in the Sciences of the Obafemi Awolowo University, Ile-Ife, University of Ibadan and University of Lagos were selected through simple random sampling. An analysis of progression of theme and rheme was done on the selected abstracts by adopting the framework of the functional sentence perspective as propounded by Dane's (1970 and 1974) and the systemic linguistic approach. The theme-rheme analysis of texts and their linguistic realization across the identified motifs was done to unravel the content of the abstracts. The findings showed that all TP patterns (Constant TP, Simple Linear TP, Derived TP and Split Rheme TP) featured in the text. The Constant TP predominates the text motifs of texts. These linguistics features largely associated with the Constant TP were the nominal phrases, noun, pronoun, cleft among others. The study concluded that text content, thematic patterns and linguistic features integrate to create meaning in text and one way to understand texts better is to unravel their patterns in texts.

Key words: Thematic progression; Motifs; Text contents; Linguistic realization; Functional categories; Functional sentence perspective; Systemic Linguistics

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INTRODUCTION

The concept of thematic progression is very relevant in giving account of the structural patterns and features of texts in general. It does justice to texts not only on structural configuration alone but also on the semantic relations of texts, and connectivity underlying the texts. This confirms what Halliday (1985, p.227) says that the success of a text does not lie in the grammatical correctness of its individual sentences, but in the multiple relations established among them. Thematic progression accounts for the multiple relations that exist in the textural structures and materials.

Danes (1974, p.114) defines thematic progression as 'the choice of ordering the utterance theme, their mutual-concatenation and hierarchy, as their relationship to the hyper-themes of the superior text units (such as paragraphs, chapter...) to the whole text and to the situation'. He stresses further that the organization of information in texts is determined by the progression in the ordering of utterance themes and their rhemes. Danes (1974), in line with some other scholars of the Prague schools of Linguistics (e.g. Mathesius 1938; Firbas 1964, 1974; etc), further recognizes two parts of the organization of information in an utterance as 'theme' (topic) and 'rheme' (comment).

It is relevant here to explain the concept of theme and rheme. The theme-rheme concept is the brain child of both Prague scholars and Halliday's systemic scholars. We shall be considering some of the definitions from both schools of thought. Halliday (1985, p.39) also defines them as 'the starting point for the message, it is what the clause is going to be about'. Halliday (1967) describes theme in

terms of its position in the clause structure as 'what comes first in the clause', 'what is being talked about' and 'the point of departure for the clause as a message'. Rheme is described as the other part of the clause that is not the theme. The above definitions of theme have generated a lot of controversies from scholars like Fries (1984). Fries (1984, p.4) attaches importance to the semanticity of theme rather than its syntactic position in the clause structure. He points out that if the issue of meaning is considered, theme, in the real sense, might not mean the points or departure for the clause as a message.' Fries (2002, p.1) then defines theme in two ways by giving both technical and functional definitions of it. The technical definition, according to him, is 'the experiential element in (process, participant, or circumstance) plus any element(s) proceeding it.' By functional definition, he says it is 'the peg on which the message is hung,' 'the orientation.

Furthermore, Fries (1983, p.116) postulates what is called 'the combining approach' that equates theme with given or 'the separating approach,' disentangling the two. The supporters of the former include Firbas, van Dijk and some other scholars, whereas the latter is propounded by Halliday and the Systemic School, who separate information structure (Given-New) from thematic structure (theme-rheme). Fries (2001) is of the opinion that the separating of the two approaches appears to be useful for English because theme typically coincides with 'given' while 'new' tends to go along with rheme.

The progression of themes and rhemes (thematic progression) is given consideration in this work because of its usefulness in revealing the structural patterning of text and the connectivity underlying the surface texts. Two basic types of topical development have been identified viz: thematic and rhematic progression (e.g. Danes, 1974; Leinonen-Davies 1984). Leinonen-Davies (1984) states that when the theme of an utterance corresponds with the rheme of the previous utterance, topical development is said to be rhematic. He stresses further that if a text exhibits excessive thematic progression, it is likely to bring about rhetorical coherence in the text, but if a text exhibits excessive rhematic progression, it brings about rhetorical incoherence in texts.

However, Downing (2001) claims that thematic progression is closely connected with discourse coherence or text connexity. She explains further that a text is defined largely in terms of its semantic coherence. Wales' (1991) definition of a text buttresses Downing's point by saying that a text is 'a sequential collection of sentences or utterances, which form a unity by reason of their linguistic cohesion and semantic coherence.'

Definition and Scope of the Abstract

The American National Standard Institute (ANSI) defines an abstract as 'an abbreviated, accurate representation of the contents of a document, preferably prepared by its author for publication with it' (ANSI, 1979, p.1). From

the definition above, an abstract in a thesis is a summary of the thesis itself, written separately at the initial part of the body of the thesis where other 'front and summary matters' are grouped. Swales (1990) calls abstracts and the titles in published papers 'front and summary matters'. This may be as a result of their position in the structure of the thesis. Swales (1990), van Dijk (1980) and Bazerman (1984) says that the reading of an abstract of a research article is reading the entire work itself. van Dijk (1980) is of the opinion that an abstract is an independent discourse and that it is an advanced indicator of the content and structure of the following text, while Bazerman (1984) sees the detached status of an abstract as a representation by saying that 'an abstract considers the article as a whole and then makes a representation of it.'

Adegbite (2007, p.3) classified an abstract into the informative and indicative/descriptive types. He describes informative abstracts as salient data from the original, while indicative abstracts indicate what data or information can be found in the original. Citing the Encyclopedia of Library and Information Science Vol.1 (Kent and Lancoueds 1968) on the rules of abstracts. Adegbite (Ibid.) makes these following statements:

- Materials that are novels, emphasized by the author or extensively reviewed need to be represented in the abstract; conversely, materials that are old or well-known to the reader(s) of the abstract should be omitted.
- Generally, subjects on which authors have invested efforts should be saved in abstracts; subjects copied by the author from earlier work can be omitted.
- The lengths of abstracts are extremely variable; limitation of the length of an abstract to 150 words or to a certain part of page may force an abstractor to generalize.
- Redundancy, repetition and circumlocution are avoided.
- Abstract should be clear and unambiguous.
- Criticism is normally avoided in an abstract.
- A fairly common rule for abstracting is that abstracts be signed.

Furthermore, Graetz (1985, p.125) considers some rules of abstraction specifically on the language expected in abstract piece. Graetz suites that:

The abstract is characterized by the use of past tense, third person, passive and the non-use of negatives. It avoids subordinate clauses, uses phrases instead of clauses, words instead of phrases. It avoids abbreviations, jargon, symbols and other language shortants which might lead to confusion. It is written in tightly worded sentences, which avoid repetition, meaningless expressions, superlatives, adjectives, illustrations, preliminaries, descriptive details, examples and footnotes. In short, it eliminates the redundancy which the skilled reader counts on findings in written language and which usually facilitates comprehension.

Swales (1990) states categorically that most of the opinions of Graetz (1985) about abstracts are not true. For instance, the use of 'past tense', 'abbreviations,' 'phrases

instead of clauses' etc. Most abstracts use these linguistic elements, especially past tense and abbreviations. But some of the Graetz suppositions on abstract are relevant and supportive of what an abstract should contain.

Talking about the organizational structure of the abstract, Bhatia (1993, p.79) comes up with these four moves, following Swales' (1990) moves patterns.

- Introducing purpose
- Describing methodology
- Summarizing results
- Presenting conclusions.

As reported by Adegbite (2007), the format below is observed by most postgraduate schools/colleges in Nigeria.

- Aim and Objectives
- Methodology or Research Procedure
- Findings or Result of Study
- Conclusion

Meanwhile, Bhatia (1993, 1999) call the moves pattern the 'genetic integrity.' Halliday and Hassan (1989) refer to it as the 'Generic structure potential' (GSP) of a genre. Some genre based studies have employed Swales' (1990) move analytic models of text-analysis to know whether or not the generic prototypical rhetorical patterns that he has introduced exist universally. The present study by contrast, adopts the Functional Sentence Perspective or thematic progression as an analytic tool to explore the realization of the structure of these abstracts. It also accounts for the linguistic features of this academic genre.

1. STUDIES ON THEMATIC PROGRESSION TEXTS

Some scholars have analyzed thematic progression of different texts. Among these scholars are Nwogu and Bloor 1991; Dubois 1983; Adegbite and Ajayi; 1995; Adegbite 2007; Olagunju 2004, 2007, etc.

Dubois (1987) and Nwogu and Bloor (1991) have analyzed thematic progression pattern of scientific texts and both studies have found that the Simple Linear pattern and the Constant TP pattern to be frequent, while the occurrence of the Derived Theme pattern make the work different. Nwogu and Bloor (1991) find out that the 'derived themes' are represented in their research article data but not in the more popular medical texts.

Adegbite and Ajayi (1995) have analyzed thematic progression of divinatory and incantatory poetry and they have found that the Constant TP pattern predominate the texts. Olagunju (2004) utilizes thematic progression to analyse two novels of Femi Ojo Ade. The study found that the Constant TP predominate the text despite the featuring of all other types of TP patterns.

Osianwo (2002) also considered thematic progression of newspaper reports. He deviated from Danes' (1970, 1974) in his identification of TP patterns. Osianwo

identified five types of thematic progression as Linear Progression pattern, Constant Topic pattern, Hypertheme pattern, Mixed pattern and No pattern. Although, all these pattern resolve around Danes' own by findings, the Constant Topic Progression pattern is more frequent than the others.

Downing (2001) has also analysed thematic progression of journalese. She found that all TP patterns as identified by Danes (1974) featured with the exception of the Derived TP pattern. The Constant TP is most frequent in the journalese. Downing (2001, p.1) stresses that.

Familiarity with a variety of genres might lead to predications that particular text-type would display sequences of choices as regards thematic progression.

Fries (2001, p.3) also hypothesizes that:

Different pattern of thematic progression correlate with different genres, i.e. patterns of thematic progression do not occur randomly but are sensitive to genres...

Furthermore, the assertion of Downing (2001) and Fries (2001) need further investigations because if thematic progression of a text is genre sensitive, it must be fully confirmed and well established.

Moreover, Ortega (2001) considered thematic progression of a story. His work which he called *Extended Thematic Progression* is a deviation from Dane's theory. He follows Scinto's (1983, 1986) notional system whose main purpose is the graphic representation of the passage analysed through a limited number of abbreviations and symbols. His work is relevant to this study because of the recognition of Danes' work on thematic progression and also, he sees other work on TP as emerging from Danes' initial conception of the theory as a pillar of textual organization.

Lastly, some of the existing literature on thematic progression in text have been reviewed and their relationship with Danes' TP model have been considered. The present study explores the concept of thematic progression in postgraduate theses abstracts.

2. RESEARCH METHODOLOGY

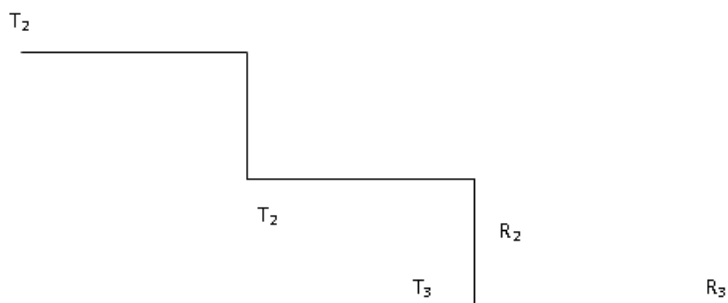
Ph.D theses' abstracts produced in the Faculty of Science of some Federal Universities in Southwestern Nigeria in the period between 2000 and 2005 were collected. These universities were ObafemiAwolowo University, Ile-Ife, University of Ibadan and University of Lagos. It is necessary to state here that we also have state-owned universities in Southwestern Nigeria but the researcher has purposively selected only the Federal University of Universities. This selection is based on the fact that these are first generation universities in Nigeria.

In all, out of 603 theses' abstracts that were available between 2000 and 2005, being a relatively recent period,

150 or (25%) were selected through simple random sampling. The type of simple random sampling employed for the study is called 'the use of table or random digits (Nworgu, 1991). This method means a continuous sequence of numbers not appearing in any particular order. The numbering of this nature may be in ascending or descending order. We decided to use the ascending order numbering and picked on every 4th abstract.

The selected abstracts were analysed and described adopting the framework of the Functional Perspective (FSP) and the Systemic Linguistic approach.

2.1 Danes TP Model



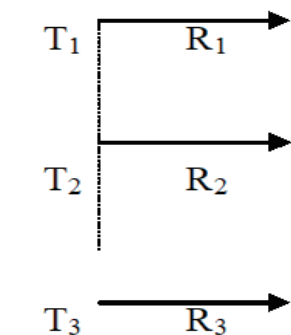
Example 1:

T_1 Infrared spectroscopy method of analysis/was employed in characterizing some vegetable seed oil namely; palm kernel, pumpkin, soyabean and

T_2 Gourd seed oil. Some physic-chemical properties of these oil samples/were determined, which include the acid value, saponification value and iodine value.

T_3 The iodine value of soyabean, gourd and pumpkin seed oils/have a close range (137.4, 134.5 and 131.0mgVg respectively).

(ii) TP with Constant (continuous) Theme: This is the pattern of TP in which the same theme appears in sequence in a series of utterances, though not necessarily making use of identical wording. Fries (2001) describes this as a topically linked TP pattern, Danes (1974) represents it thus:



Example 2

Danes (1974) defines thematic progression as 'the choice and ordering of utterance theme, their mutual concatenation and hierarchy, as well as their relationship to the hyperthemes of the superior text unit such as paragraph, chapter..., to the whole text and the situation'. Danes (1974) postulates four main types of thematic progression thus:

(i) Simple Linear TP Pattern

Each rheme becomes the theme of the next utterance. Danes (1974, p.18) considered this pattern as the most elementary or basic TP. It is represented thus:

T_1 The occurrence of asymptomatic significant bacleriuria during pregnancy/is of
 T_2 increasing concern due to attendant risks. Asymptomatic significant bacteriuria
 R_2 was investigated in 502 apparently healthy pregnant women attending antenatal
 T_3 Clinics in Ado Ekiti. The types of bacteria associated with asymptomatic bacteriuria
 R_3 /were identified.

(iii) TP with Derived Theme

Themes are derived from a hypertheme. Fries (2001) describes a hypertheme as the superordinate term to which all the themes relate. Danes (1974, p.114) represents it thus:



Example 3:

T_1 A critical analysis of the traditional African theatre forms/ suggests that they are suitable sources for evolving television drama, since the traditional theatre presents a unique aesthetic principle for the demonstration of theatre forms

T_2 In Nigeria. This/ means an examination of the concept

of aesthetic in general and how aesthetic quantities re-define the traditional theatre in particular because

T₃

These quantities exert full impact on Televisions drama. The history of Television

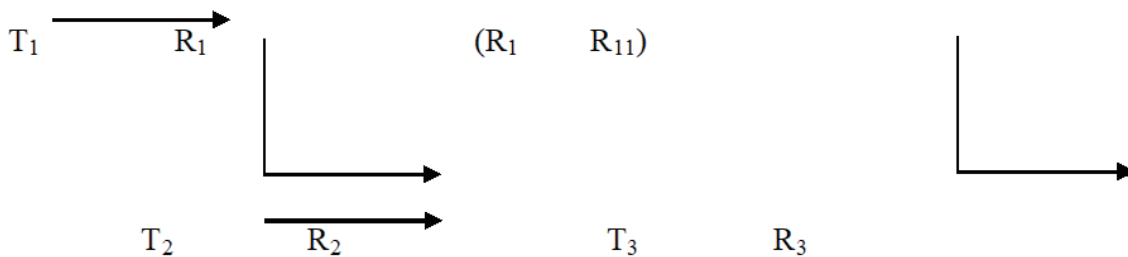
R₃

drama in Nigeria, which a close look at its form

and content/ was investigated and predicated on those productions that had already been done on the Nigeria Television screen.

(iv) The Split Rheme TP Pattern

Danes (1974, p.120) ascertained that the combination of patterns 1 – 3 gave birth to the forth one, which is called the Split Rheme TP. It is illustrated thus:



Example 4:

T1	R1	R1
All substance/ can be divided into two classes, elementary substances and		
T2	R2	R2
compounds. An elementary substance/ is a substance consists of atoms of only one		
T1	R3	R3
kind ... A compound/ is a substance which consists of atom of two or more different kinds ...		

is the Split rheme TP while the Simple Linear TP has the lowest degree of frequency. We shall exemplify each of the TPs and their various realization within the structure of the abstract studied.

It is worthy to mention here the observation made on the findings. The Constant TP, being the most predominant one is realized across the motifs of the Science abstracts studied but solely characterised the introduction. The Derived TP which is next to it, only featured in the findings motif. The Split Rheme pattern featured in methodology and findings motifs while the Simple Linear TP features in all the abstracts motifs save for the introduction. We shall exemplify and clarify our findings in each section to make our explanation logical.

3. ANALYSIS AND FINDINGS

Based on the analysis and findings from the Science-based abstracts studied, we found that all the TP types featured. The differences of the TP realization will be given enough clarification in the subsequent sections of this study. The Constant TP has the highest frequency of occurrence and this is followed by the Derived TP. Next to the Derived TP

3.1 TP Patterns in the Introduction this below

The Introduction of the Science abstracts selected for the study in characterised by the Constant TP. We shall exemplify this below.

Example 1

Clause	Theme	Rheme
1.	In this work, some fixed point iteration procedures for nonlinear operators in Banach spaces	Are studied
2.	To accomplish our objectives, a brief survey of the basic concepts of mam and I shikawa iteration schemes.	Are critically examined
3.	Some basic concepts of nonlinear operators along with some relevant fixed point results int eh literature	Are presented

The nominal phrases were employed to write the introduction above. In Clause 1, the adverbial precedes the thematic element and the same is for Clause 2. The

nominal phrases realized the themes of the three clauses and thus, the Constant TP is exhibited.

Example 2

Clause	Theme	Rheme
1.	Exploration	Was carried out in parts of the states of South-western Nigeria to determine the occurrence and distribution of panicum maximum jac...
2.	Thirty-five accessions	Were collected and transplanted into the biological garden of Obafemi Awolowo Unuversity, Ile-Ife, Nigeria.
3.	T h e s e accessions	Were subjected to morphological, agrobotamical, foliar epidermal, reproductive biology, meiotic, karyotypic, forage and nutritive value studies.

In the text above, the abstract noun is used in the theme of Clause 1. In Clause 2, the writer uses the nominal phrase to realize the theme and this is referred to in the theme of Clause 3 by using the demonstrative 'these' in the nominal structure of the clause. All these clausal elements made it possible to have the Constant TP.

Example 3

Clause	Theme	Rheme
1.	Cyclospora cayetanensis, a unicellular parasite and the only species of the genus cyclospore.	Is known to the clause gastro-intestinal conditions, culminating in severe, prolonged and intermittent diarrhea in both immune competent and immune-compromised individuals globally.
2.	Is association with humans as a diarrheal agent	Was first reported in 1979
3.	Prior to 1994 when its present taxonomy was published, it	Was known as cyanobacterium like or coccid like or cryptosporidium- body (CLB).
4.	Its epidemiology, biology, infections, dose, route of transmission	Are still unclear and speculative

In the introduction above, the writer employed the Constant TP and the nominal and pronominal phrases were used to realize the themes of the four clauses. In Clause 1, we have the use of opposition in the thematic slot of the clause 'Cyclospora Cayetanensis, a unicellular parasite and the only species of the genus cyclospora'. This is referred to in Clause 2 by the use of pronoun 'it' in the structure. In Clause 3, the writer also use the neuter pronoun 'it' as the thematic element of the clause while in Clause 4, we also have the pronominal phrase. Furthermore, as earlier mentioned, the Constant TP featured across all the motif of the Science abstract studied. Below are the examples of the Constant TP in the methodology motif.

3.2 TP Patterns in Methodology Motif

The methodology motif of Science abstracts studied is characterized by three types of thematic progression patterns. They are the Constant TP, the Split Rheme TP and the Simple Linear TP. The Derived TP did not feature. The TP pattern mentioned are arranged according to their frequencies and each of them will be exemplified in this section.

Example 4

Clause	Theme	Rheme
1.	A total of 20,730 individuals, eleven phyla, sixteen classes, sixty-two families and one hundred and twenty-four species	Were recorded in the sampling period
2.	Species belonging to the following phyla prorifera, Nemerina, Amelida, Pronophora, Echiurodea, Sipunculodea, Mollusca Arthropoda, Echinodermete, Hemi-Chordata and chordate	Were collected and documented
3.	Thirty-six species	Were reported in the wet season.

In the methodology motif, the constant TP was used by the writer. The nominal phrases realized the themes of the clauses. Ordinal numbers are found in the structure of the theme of Clauses 1 and the cardinal numbers also featured in the themes of Clauses 1 and 3. The writer used the comma (a punctuation mark) in the structure of themes 1 and 2 to mark list of items in the slot- "...Annelide, Pogonorplora, Echiurodea, Sipunculodea..."

Example 5

Clause	Theme	Rheme
1.	Chromosome studies	Were carried out using the squash technique.
2.	Forage and nutritive value	Were carried out according to standard procedure.
3.	Data	Were analysed using standard statistical procedures (ANOVA), cluster Analysis, Principal Component Analysis, simple descriptive statistics and graphs.
4.	Two field forms	Were collected and planted.

The Constant TP is used in the text above. The writer employed the nominal phrases and noun to realize the themes of the clauses. Clauses 1, 2 and 4 used the nominal phrases. The author employed the abstract noun 'data' to realize the theme of Clause 3.

Example 6

Clause	Theme	Rheme
1.	One hundred and two children aged between 1 and 10 years and 65 children aged between 1 month and 8 years diagnosed with cm	Were recruited in Lagos and Limbe respectively.
2.	192 (aged 1 month – 10 years) and 114 patients	Were also recruited in Lagos and Limbe respectively.
3.	Control patients 9184 in Lagos and 70 in Limbe)	Consisted of children brought to hospital for immunization or other minor ailment but who were afebrile or asymptomatic.
4.	A questionnaire designed to assess the knowledge of clinical students and clinicians on the Blantyre coma scale	Was distributed among the study groups in Lagos.

In the text above, the Constant TP pattern of discourse organization is achieved by the use of nominal phrases which come as either single or multiple in the clauses concerned. In Clause 1, we have a case of multiple themes and the nominal phrases. These phrases are linked together by 'and' conjunction. The themes of the other clauses in the methodology above were also realized by the nominal phrases with the use of cardinals in the structures of the themes '192 (aged 1 month-10 years) and 114 parents (aged 2 month – 8 years)...'

The Split Rheme only featured in the methodology and findings of the Science abstracts studied. This may be attributed to the nature of the Split Rheme pattern being a combination of one or more other TP patterns. Also, the nature of introduction and conclusion of an abstract does not call for the use of this particular pattern.

Example 7

Clause	Theme	Rheme
1.	The data used	Were collected through two major analytical techniques.
2.	The descriptive technique	Involve the use of observations, oral interview and questionnaire.
3.	The statistical tool	Were one way analysis of variance (ANOVA), Pearson Correlation Matrix and Linear Regression Model respectively.

The methodology motif above is realized by the Split Rheme TP. The nominal Phrases realized the themes of Clauses 1 – 3. The themes of Clauses 2 – 3 referred to the rheme of Clause 1 ‘two major analytical techniques’. This realized the Split Rheme TP.

The simple Linear TP had the lowest degree of frequency in methodology motif of

Science abstracts. It featured in all the abstract motifs with the exception of the introduction which is solely characterized by the Constant TP in both Science and Humanities abstracts studied.

3.3 TP in Finding Motif

From the analysis of our data, it is discovered that the Constant TP featured greatly in the findings motif of Science abstracts. In most of the abstracts, the writers used the Constant TP in the introduction motif where CTP is solely used. We shall exemplify the Constant TP in the findings motif in this section and this will be clear enough to back up our explanations.

Example 9

Clause	Theme	Rheme
1.	Laboratory bioassays in which <i>T. fuscatus</i> were exposed to sublethal concentrations of heavy metal in supple or joint action studies	Revealed that the periwinkles bioaccumulated in their whole bodies varying amounts of metals depending on the type of metal, length of exposure time and the concentration of the metal compound in the test media.
2.	Zn and Pb ions accumulated by <i>T. fuscatus</i>	Increase steadily with time of exposure.
3.	The amount of Cu accumulated in the body tissue of these same test animals	Fluctuated regularly over the 30-days experimental period.
4..		Was found that the level of Zn, Cu, and Cd bioaccumulated over a 30-day period was significantly reduced.

The Constant TP is exhibited in the findings motif above. The textural features of nominal phrases and the cleft realized the themes of the clause. In clause 1-3, we

Example 10

Clause	Theme	Rheme
1.	Forage yield studies	Revealed that number of tillers per plant stand and dry matter yields of Culm, leafy portion and above ground plant are the forage yield.
2.	The nutritive values studies	Showed that Crude Protein, Potassium, Nitrogen, Sodium and Calcium concentrations are within the recommended range for animal feed.
3.	Based on forage attributes and nutritive, genetic entities	Have further revealed that <i>P. maximum</i> in South-western Nigeria are poor seeders.
4..	Their propagation	Is through root-stock and....

In the text above, the writer used the nominal phrases to realize the themes of the clauses concerned. And these in turn realize the Constant TP pattern. In Clause 3, the adverbial preceded the thematic element ‘genetic entities’. The findings is presented sequentially through it is not with identical wordings but the sense of logicity is displayed.

Example 8

Clause	Theme	Rheme
1.	The result of the study	Revealed that the value of crude protein ranged between 23.4% and 30.6% while true protein value was between 19.9% and 25.0%.
2.	The dietary fibre	Was between 31.9% and 49.9% while total sugar was between 9.0% and 16.1%.
3.	Linoleic acid	Was the prominent fatty acid.
4..	Potassium	was the highest mineral (443.0-934.0mg/g). followed by calcium...
5.	The available iron	Was found to be low (2.0% and 7.9%).

The text above exemplify the Constant TP in findings motif of Science Abstract. The writer used the nominal phrases and a noun to write the themes of the clauses. Clause 1 introduces the findings by using the nominal phrase ‘The result of the study’. The ‘result’ that is referred to in the theme of Clause 1 is now presented logically and sequentially in the succeeding clauses. In Clause 4, the writer used the common noun ‘potassium’ to realize the theme. Meanwhile, in the nominal structure of the themes where the nominal phrases appeared, we have the determiner save for Clause 3. The rhemes are not too lengthy but pack up with information which is exhibited by the use of cardinals and percentages respectively (e.g 30.6%, 9.0%, 20.0% etc)

have the use of the nominal phrases in the thematic slots Clause 4 uses the cleft to realize the theme.

As earlier mentioned, the Derived TP pattern is next in frequency of occurrence to the Constant TP in Science Abstracts Studied. Unlike the Humanities abstracts studied, where the Derived TP featured in methodology and findings motif, it only featured in the findings motif of the Science abstracts. This will be exemplified below.

Example 11

Clause	Theme	Rheme
1.	A total of seven compounds	Were isolated
2.	And their structures	Were established
3.	One of the isolated compounds, 6-C-methyl-quercent -3, 3; 4' – triethyl ether	Is reported from plant source for the first time, a new natural product.
4.	Also, the full spectra assignment of 6-C- methylkaempferol 1-3 methyl ether	Was also reported for the first time.

The example above is that of the Derived TP in the findings of Science abstracts. The themes of other clauses derived from the hypertheme. The superordinate or hypertheme is that of Clause 1 of the text, 'A total of seven compound'. In Clause 2, the theme refers to that of Clause 1 by the use of the pronoun 'their' in the

structure and this is linked together by the coordinator 'and'. In Clause 3, the writer refers to one of the 'seven compounds' that realized the theme of Clause 4 describes the 'full spectra assignment' of the same compound. In summary, the themes of Clauses 2-4 derived from Clause 1, thus we have the Derived TP in the findings motif.

Example 12

Clause	Theme	Rheme
1.	51 other clinical isolates of salmonelia	Were screened with antisera produced in rabbit.
2.	Out of these, twenty nine (29) 956.8%)	Reacted positively with antiserum raised against strain STOLL.
3.	Eleven 921.70)	Reacted positively with antisera raised against strain SA34.
4.	Eight (15.59%) and 3(5.88%)	Also reacted positively with antisera raised against strain SZ14 and SB36 respectively.
5.	A remarkable degree of specificity	Was found as antisera produced in the study were absorbed using foare bacteria pathogens in the family Enterobacteriaceae.

The findings motif above is projected by the Derived TP. The theme of Clauses 2-4 derived from the thematic element of Clause 1. The fifty one clinical isolates were categorized by the writer in the themes of the clauses above. The linguistic property of the nominal phrase projected the Derived TP used.

3.4 Pattern in the Conclusion Motif

We observed from the data that the conclusion of the Science abstract are not all that elaborate like the methodology and findings. The Constant TP almost dominates all except few instances of the Simple Linear TP. Below are the examples from our data.

Example 13

Clause	Theme	Rheme
1.	In conclusion, the study	Revealed that A. colei and A tumida are nutrition and could compete favourably with other legumes as a source of protein, minerals and other nutrition compounds.
2.	The chemical methods of amino acids determination	Also compared well with the use of sophisticated pieces of equipment.

The Constant TP is used in the conclusion above. The nominal phrase is used to realize the themes of the clauses. In Clause 1, the adverbial 'in conclusion' was

used before the thematic element of the clause 'the study'. This adverbial is an indicator of the conclusion of motif of that particular section of the abstract.

Example 14

Clause	Theme	Rheme
1.	In conclusion, the study	Confirmed the existence of the emerging diarrhoeal pathogen in Lagos, with a prevalence of 0.99%.
2.	It	Has also shown that majority of our medical practitioners are completely ignorant of the existence of this pathogen in the world and Lagos in particular.
3.	The study	Has also established that there exist a significant association between chitection of cyclospora and diarrhea in Lagos and that vegetables may just be a possible source for its transmission in the state.
4.	This	Is the first time such discovery is been made in Lagos Nigeria.
5.	It	Is hoped that this will stimulate scientific questions and interest, in order to provide more studies and information about this pathogen, with a view of providing effective management of diarrhea and the development of new health policies.

In the conclusion of the abstract above, the Constant TP was used. The nominal phrase, the third-person singular neuter pronoun 'it', the demonstrative pronoun and the cleft were used to realize the themes of the clauses. In Clause 1, the adverbial 'in conclusion' precedes the thematic element 'the study' and the theme

of Clause 1 is referred to in Clause 2 by the use of the pronoun 'it'. In Clause 3, we have an instance of identical wordings. The lexical properties of theme 1 realizes that of theme 3., in Clause 4, the writer uses the demonstrative 'this' to realize the theme while the cleft 'it' realized thee theme of Clause 5.

Example 15

Clause	Theme	Rheme
1.	The study	Concludes that the clay strong can be utilized for ceramics, brick making and fillers on the basis of its physical, chemical and mineralogical characteristics.
2.	The phosphorites	Can be locally applied to crops.
3.	The study	further establishes that the Daihoney basin has more prospects to generate gas rather than oil, particularly in the deeper horizon of the Araromi formation.

The Constant TP is used in the abstract above. The nominal phrases realized the themes of the three clauses. In the nominal structure of each of the clauses, we have the indefinite article ‘the’ and this serves as the determiner. We also observed that the theme of Clause 1 is

the same as the theme of Clause 3. Thus, we have a case of identical wordings.

The examples of the Simple Linear TP that featured in the conclusion motif of Science abstracts is given below.

Example 16

Clause	Theme	Rheme
1.	The study	Has established that <i>P. reticulum</i> has similar antimicrobial spectra, anti-inflammatory, potential and chemical constituents as <i>P. thominigi</i> .
2.	Thus, substitution of <i>P. reticulatum</i> for <i>P. thormiinigi</i> in etho-medicine.	Is justified.

The conclusion motif above is projected via the Simple Linear TP pattern. The nominal phrase realized the themes of the clauses. In Clause 1, the demonstrative ‘this’ serves as the determiner in the nominal structure while in Clause 2, the thematic element is preceded by the adverbial ‘thus’. The adverbial in Clause 2 serves the purpose of linking the two clauses together. Meanwhile, the theme of Clause

1 serves as the theme of Clause 2; thus, we have the use of the Simple Linear TP pattern.

The Realization of TP Across Motifs of Science Abstracts.

The table below represents the various realization of all the TP types in the motifs of the Science based abstracts selected for the study.

Table 2
TP Patterns Across the Motifs of Science Abstracts

TP Patterns	Introduction		Methodology		Findings		Conclusion		Total	
	N	%	N	%	N	%	N	%	N	%
Constant TP	900	19.2	1,020	21.8	2,160	46.2	600	12.8	4,680	100
Simple linear TP	0		60	28.6	90	42.8	60	28.6	210	100
Derived TP	0		0		753	100	0		753	100
Split rheme TP	0		242	47.3	270	52.7	0		512	100

CONCLUSION

Since a text encode meaning at several levels, a comprehensive analysis of texts or genres has to be at multiple levels in order to efficiently and effectively understand their meanings. Text content, thematic patterns and linguistic features integrate to create meaning in texts and one way to understand texts better is to unravel their patterns in the texts.

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