An Exploration of the Generic Structures of Problem Statements in Research Article Abstracts

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Abstract
Studies on research article abstracts have examined the abstracts in their entirety. Besides, while some of these works concentrate on conference abstracts, most of them analyse a combination of research abstracts from a variety of disciplines outside arts-based disciplines. Problem statement segments of the abstracts are yet to be exclusively studied. Motivated by the paucity of work of this kind, this article therefore explores the generic structures of problem statements in arts-based research article abstracts. The study got its data from purposively selected three hundred arts-based research article abstracts published in learned journals in the inner circle between 2001 and 2010. The data were analysed using insights from the generic structure potential, mood and modality aspects of SFG. Out of the five generic structural features that were found to characterise the abstracts, only two namely; Picking Out Inexistent Works(PIW) and Picking Out Inadequacy of Existing Works(PIEW) were found to be obligatory while the rest are optional. Variants of gap identification mood categories (e.g. gap identification moods that pick out inexistent work and those that pick out inadequacy of existing works etc.) and modality categories (possibility modals) were also found in the data. These enhance effective statement of the communicative goals of research problems in the abstracts. The article concludes that studying the generic structure of problem statements in the abstracts has potency of providing useful insights into how, in what form and where the research problems are stated in the abstracts.
Keywords: Research Article Abstracts, Problem Statements, Generic Structural Potential(GSP), Mood, Modality

1. Introduction

Existing studies on abstracts of Research Articles (RAs) published in learned journals in the fields of sciences (physical, experimental, biological, biomedical etc.), social sciences, law, and humanities or arts-based disciplines(e.g.,literature, applied linguistics, language and linguistics, fine arts, performing arts, cultural studies, anthropology, history, religion, area studies, communication, classics, philosophy etc.) have, in the literature, adopted a wide range of approaches namely; applied-descriptive linguistic (e.g Graetz 1985, Kittridge 2002, Pezzini, 2003 etc.); discourse analytical (e.g. Brenton 1996, Rimrott, 2007 etc.); rhetorical/comparative analytical (e.g Martin-Martin, 2002; Martin-Martin and Burgess, 2004; Lores 2004; Breeze 2009, Cava 2010, etc.); critical discourse analytical (e.g. Martin 2003; Stotesbury 2003; Hyland and Tse 2004; etc.); generic structural descriptive, (e.g. Do Santos, 1995, Samraj 2004, Patpong 2010 etc.); computational linguistic (e.g Jien-Chen etal 2006, Alves de Souza and Feltrim 2011, etc.); cohesive/.thematic structural descriptive (e.g.Ceni Denardi et al (forth-coming), Adegbite, 2009, etc.); sociolinguistic (e.g. Belotti 2008 etc.) and socio -pragmatic (Gillaerts and Van de Velde 2010 etc.). Available literature ostensibly reveals that all these works have studied research article abstracts in their entirety (i.e. all the various aspects of the abstracts). Besides, while some of these works concentrate on conference abstracts(e.g. Hucking 1988; Brenton 1996), most of them analyse a combination of research abstracts from a variety of disciplines outside arts-based disciplines(e.g see Stotesbury,2003; Hyland and Tse, 2004; Adegbite, 2009; etc.). In addition, although both Do Santos(1995), Samraj(2004) and Patpong(2010) have adopted generic structural descriptive approach, their data base are however different from that of the present work.   No work, to the best of our knowledge, has exclusively singled out the problem statement aspects of the research abstracts in arts-based learned journals for linguistic analysis most especially from the purview of Systemic Functional Grammar (SFG). This creates a wide vacuum in the literature and it is this vacuum that the present study sets out to fill. The Problem Statement (PS) aspects of the abstracts are observed to be composed of five internal generic structural components namely; Extending Research Frontiers (ERF), Accounting for Unsatisfactory Treatment of Research Object (AUTRO), Creating a Link between one Area of Knowledge and Another (CLAKA), Picking out Inexistent Work (PIW) and Picking out Inadequate Existing Work (PIEW). This study therefore, investigates the Problem Statement (PS) aspects of the abstracts with a view to exploring/ analysing their generic structural features that are used in stating the research problems in the abstracts.   Mood and modality aspects of their linguistic components are equally examined.

This study is significant in a number of ways. First, it is valuable in complimenting existing works in academic communication in general and research article abstracts in particular. Second, it will also provide additional

insights into how and where the research problems are stated in the abstracts. The present study is equally aimed at finding lasting solution to the difficulties being encountered by new comers into the academia vis-à-vis getting their abstracts approved in academic journals and at international conferences (cf. Motta-Roth 1999:97). It would also serve as a useful material for academic discourse pedagogy in general, and abstracts' writing pedagogy in particular.

Data for this study were obtained from the internet and collected through purposive selection of 300 abstracts of Research Articles published between 2001 and 2010 in learned journals of arts-based disciplines. The journals selected are domiciled in universities in the inner circle(countries where English is spoken as mother tongue). Our choice of data from the inner circle was necessitated by the larger concentration of global arts research in these countries. The choice of period was motivated by the e-technology which unprecedentedly provided global visibility in the new millennium. The problem statement aspects of the selected abstracts were carefully examined and analysed using the Generic Structural Potential (GSP) theoretic approach of Systemic Functional Grammar (SFG).

2. The Concept of Problem Statements in Research Discourse

The generic structure potential (GSP) of our data (the arts-based research articles' abstracts) is observed to have stretched between Background Information(BI) and Conclusion(C). The generic structural items of the abstracts are Background Information (BI), Problem Statement (PS), Statement of Objectives (SO), Theoretical Framework(TF), Methodology(M), Analytical Framework(AF), Findings(F) and Conclusions(C). The present study therefore focuses on the problem statements only because they are central to the present engagement.

Problem Statement (PS) in research work serves as a means by which writers (scholars) in academic discourse often try to justify the relevance of their research by demonstrating that a "gap", problems, or deficiencies exist in current applications, methods or knowledge(cf..Hyland 2000:17). In other words, problem statement is a clear-cut explanation of the reason(s) why a study or a research is worth carrying out. Problem Statement in research work has also been described as 'the triggering point for research' (Ellis and Levy, 2008:22) and 'the hub of any quality research activity'(O' Connor, 2000). It entails a clear explanation of the justification of a research work. Besides, establishing research problems in a particular area of knowledge may also involve a review of existing studies in the area. This review is done, in most cases, with a view to identifying areas where scholars (researchers) have worked and the approaches adopted; areas where works or studies are yet to be carried out and/or areas where much is yet to be carried out, i.e., where the existing works are inadequate (cf. Osuala 2001; Hyland 2000; Bhatia 1993 etc.).

3.0   Systemic Functional Grammar

Systemic Functional Grammar (SFG) is a theory of language that adopts a sociological and functional-based approach to language study. Considering the sociological and functional interest of systemic grammar, its major concerns, as noted by Berry (1977:1), are perhaps *behaviour, function* and *situation.* Systemic functional grammar considers (views) language as a form of behaviour which is functional, as something that we do with a purpose or more. This implies that language use is goal directed. Besides, systemic grammar is also interested in language as social semiotics – how people use language with each other in accomplishing everyday social life (Halliday 1978 quoted in Eggins 2004:3). This interest, as noted by Eggins (op.cit), leads systemic linguists to advance four main theoretical claims about language. These are (i) language use is functional; (ii) its function is to make meanings; (iii) These meanings are influenced by the social and cultural contexts in which they are exchanged and (iv) The process of using language is a semiotic process, a process of making meanings by choosing. Eggins (2004:3) has summarized these theoretical claims by describing the systemic grammatical approach as a *functional-semantic approach to language.*

Systemic Functional Grammar (SFG) is composed of several branches namely; the concept of language, metafunction, text and context, genre analysis and generic structure potential and finally, its linguistic components. For the purpose of the present study, we shall focus on genre analysis, generic structure potential and linguistic components of SFG. On linguistic components, our emphasis shall be on mood and modality. These are discussed in turn.

3.1 Genre Analysis and Generic Structural Potential

3.1.1 Context of Situation

Context of situation is the immediate environment in which meanings are being exchanged – the environment in which a text is actually functioning (cf. Halliday and Hasan 1991:46; Ansari and Babaii 2004:6). As noted by Adegbite (2000:66), the immediate or 'context of situation' (Malinowski,1923; Firth,1962) specifies the component which describes the specific circumstances in which communication takes place pertaining to times, place, events, and other conditions. The components/features of context of situation have been presented in various ways by linguists (e.g. see Firth, 1962; Hymes, 1962, Halliday 1978; Ellis, 1988, Halliday and Hasan 1991 etc.). From a systemic functional grammatical perspective, for example, Halliday (1978) and Halliday and

Hasan (1991) have identified three components or features of context of situation corresponding to three metafunctions. These are field of discourse, tenor of discourse and mode of discourse (For details, see Halliday and Hasan op.cit.). These three features of the context of situation (CS) help us to interpret the social context of a text, i.e., the environment in which meanings are being exchanged.

Besides, Halliday and Hasan (op.cit.) have also introduced an additional concept called Contextual Configuration (CC). Contextual configuration is an account of the significant attributes of a social activity. In a more specific way, each of the three features of the context of situation (CS) namely; field, tenor and mode, as noted by Ansari and Babaii (2004:6), may be considered as a variable (factor) that is represented by some specific value(s). Each variable is said to function as an entry point to any situation as a set of possibilities and/or options. Therefore, the variable 'field' may have the value 'praising' or 'blaming'; Tenor may allow a choice between 'parent-to-child' or 'employer-to-employee' while 'Mode' might be 'speech' or 'writing' (Ansari and Babaii op.cit.). A Contextual Configuration is therefore, a specific set of values that realizes field, tenor, and mode (Halliday and Hasan 1991:55; Ansari and Babaii 2004:4). Contextual Configuration (CC) plays a central role in the structural unity of the text. Halliday and Hasan (ibid:56) point out that ''If text can be described as language doing some job in some context, then it is reasonable to describe it as the verbal   expression of a social activity.'' The Contextual Configuration (CC) is an account of the significant attributes of this social activity. Therefore, the features of the CC can be used for making certain kinds of predictions about text structure. These predictions, as identified by Halliday and Hasan (op.cit.), are as follows:(i) What elements must occur; (ii) What elements can occur; (iii)Where must they occur; (iv) Where can they occur; and(v) How often can they occur. In short, a contextual configuration (CC) can predict the *obligatory* and the *optional* elements of a text's structure as well as their *sequence* in relation to each other and the possibility of their *ITERATION*.

3.1.2   Context of Culture

Halliday and Hasan (1991:46) describe *context of culture* as a broader background against which the text has to be interpreted. They note further that any actual context of situation, the particular configuration of field, tenor and mode that has brought a text into being, is not just a random jumble of features but a totality of a package … of things that typically go together in the culture. Context of culture, which encompasses and/or specifies the conventional or socio-cultural rules guiding people's use of language, largely determines the text's interpretation because it assists in the predictability of the text from the context (cf. Halliday and Hasan ibid:47; Adegbite 2005:54).

From a Systemic Functional Grammatical (SFG) perspective, context of culture determines the structural pattern of text production because it specifies the 'cultural purpose' of the text – what a particular text is doing with language. When we state the purpose that a text fulfils, we are stating what kind of job the text does in its culture of origin (cf. Eggins 2004:55). Identifying the purpose of a text is said to have potency of giving readers clues on how to read and therefore interpret the (sometimes indeterminate) meanings of the text. When we do this, we are recognizing the *genre* of the text (Eggins op.cit.).

3.2   Genre and Genre Analysis

Quite a number of definitions of genre have been given in the literature (e.g. see Miller 1984; Martin 1984; 1985; Martin, Christie and Rothery 1987; Swales 1990; Thompson 1994; Hyons 1996; Eggins 2004 etc.). Swales'(1990) definition of genre shall be taken as our guide. For Swales (1990), genre is composed of "communicative events, whose structure and context are shaped by the purpose of the discourse community in which the genre is situated." In other words, the communicative purpose of a particular genre, which is recognized by the experts of that field, determines what occurs or does not occur in the textual realization of the genre. This implies   that a genre is not only determined by its formal features/properties but more largely by the communicative purpose it is designed to serve within a particular culture or discourse community. In the Systemic Functional Grammatical (SFG) approach to genre, different genres are different ways of using language to achieve different culturally established tasks, and texts of different genres are texts which are achieving different purposes in the culture. Therefore, a text's genre is said to be identified by the sequence of functionally different stages or steps through which it unfolds (Ansari and Babaii 2004:5). The major reflex of differences in genres is the staging structure of texts. These niceties, as noted by Ansari and Babaii (op.cit.), are often captured with reference to the Context of Culture (CC) in which the texts are produced.

Genre analysis in the literature has been approached from two perspectives namely; the move analytic approach, proposed by Swales (1981, 1990) and the Generic Structure Potential (GSP) – analytic approach based in Systemic Functional Grammar (SFG). For the purpose of the present study, we shall adopt the GSP analytic procedure. We therefore attempt a more detailed discussion of the GSP below.

The Generic Structure Potential (GSP) analytic approach has Systemic Functional Grammar (SFG) as its theoretical foundation. The interest in the generic (or schematic) structure of texts has been greatly influenced by Halliday & Hasan 1985; Hasan 1978, 1984, 1996; and Martin 1992). Among the concepts favoured/ privileged in SFG are text and context. From these, both the text structure and contextual configuration (CC) are strongly implicated in the GSP – analytical approach. Contextual configuration blends together the values of the

three socio-semantic variables of field, tenor and mode to make statements about the structure of a given text and about the social context that generates it. The Contextual Configuration (CC) can predict the following elements of the structure of a text; the obligatory and the optional elements together with the sequencing of these elements. Given the CC of any text, one should be able to generate the potential structure of such text. The potential global rhetorical pattern is what is known as *GSP*. GSP has been described as a condensed statement of the conditions that locate a text within a particular Contextual Configuration (CC).

Structure Potential (SP) or Generic Structure Potential (GSP) of a text refers to the total range of optional and obligatory elements of the text and their order (Halliday and Hasan 1991:64). Two or more texts that share the same set of obligatory and optional elements and that are embedded in the same contextual configuration (CC) belong to the same genre or are texts of the same genre (cf. Halliday and Hasan op.cit.). When two texts are closely related to the extent that language is doing the same kind of job in both, they are embedded in the same Contextual Configuration (CC). Two or more texts that are embedded in the same Contextual Configuration (CC) – belong to the same genre may have some differences. These differences, as noted by Halliday and Hasan (op.cit.), are those that do not alter the kind of job that language is doing in the two. To illustrate the above explication, Halliday and Hasan (ibid: 63-65) examine a set of similar spoken texts. They thereafter identify their obligatory and optional rhetorical elements of texts, and establish what they call the GSP of the genre, "Service Encounter" that of a "Shop Transaction" as:

$$[(G). (SI) ^] [(SE.) \{SR^SC^\}^S] P^PC (^F)$$
(Culled from Halliday and Hassan 1991:64)

A GSP of this type is described as a summarized statement of the conditions under which a text will be seen as one that is appropriate to a Contextual Configuration (CC) of the Service Encounter. Simply put, it is suggested that any shop transaction in English potentially consists of the following macro-structural elements: (i) Greeting (G), (ii) Sale Initiation (S.I), (iii) Sale Enquiry (SE), (iv) Sale Request (SR), (v) Sale Compliance (SC), (vi) Sale (S), (vii) Purchase (P) (viii) Purchase Closure (PC) and (ix) Finis (F).

In the above GSP, there are labels for structures and the caret sign indicating sequence. The round brackets in the above GSP indicate optionality of enclosed elements. Therefore, G, SI, SE, and F are optional and SR, SC, S, P and PC are *obligatory*. The dot (.) between elements indicates more than one option in sequence. Halliday and Hassan (op.cit.) point out, however, that optionality of sequence is never equal to complete freedom; the restraint is said to be indicated by the square bracket. Therefore, for example, we can read the first square bracket as follows:

> G and/or SI may/may not occur;
> If they both occur, then either G may precede SI, or follow it;
> Neither G nor SI can follow the elements to the right of SI.

The curved arrow shows *iteration*. Thus, (SE.) indicates: SE is optional; SE can occur anywhere, so long as it does not precede G or SI and so long as it does not follow P or PC or F; SE can be iterative. The braces with a curved arrow indicate that the degree of iteration for elements in the square brackets is equal. This means that if SR occurs twice, then SC must also occur twice. Finally, the caret sign (^) shows sequence.

3.3 Linguistic Components in Systemic Functional Grammar

Linguistic components in Systemic Functional Grammar (SFG) encompasses information structure, clause forms, mood, modality, transitivity features and discourse functions. For reasons of space and focus, we shall limit ourselves to mood and modality aspects which are central to our present engagement. These are taken in turn.

3.3.1 Mood and Modality

The system of mood falls within the purview of the interpersonal metafunction of language. The interpersonal metafunction is a resource for enacting social roles and relationships between speaker/writer and listener/reader (Mathiessen 1995:17). Mood is one of the main grammatical systems of exchange and negotiation. Interpersonally, *clause as exchange* is the basic principle of the mood grammar (cf. Patpong 2008:655). Patpong (op.cit.) notes further that mood is the basic resource for exchanging meaning in both dialogue and monologic passages. It is the grammar of negotiation. An exchange is composed of two fundamental semantic variables namely; the orientation of the exchange and the commodity being exchanged (cf. Patpong op.cit.). Besides, speech functional categories are realised by different mood choices.

Greenbaum(1999) has classified mood choices into three namely; indicative, imperative and subjunctive ones. Indicative mood choice encompasses three sub-moods such as declarative, interrogative and exclamatory mood choices. Declarative clauses are used to realise (expressed) statements; Interrogative clauses are used to realise questions while exclamatory clauses are used to emphasise deep emotions and/or emotional feelings of surprise, happiness, anger, etc. Interrogatives (interrogative sentences) can function as questions or commands depending on their structures and the context of usage. Interrogatives that manifest in question forms could be in form of: (a) Wh-Adjuncts (e.g How about in your school?), (b) finite-subject forms (e.g. Are you in what year in college?); and (c) Ellipsed questions (e.g. English?)(cf. Butt et. al, 2000).

Imperative mood choice (which manifests in imperative clauses) is used to realise command. It is used as a

directive in requesting action. Subjunctive mood is used to express wishes or conditions that are unlikely to be fulfilled. Subjunctive moods are of two types namely; present and past types. Finally, various clauses are used to realise offer.

Modality in English and other languages has attracted wide and elaborate attention by scholars from variants of disciplines in the last three decades. Among the disciplines that have contributed to the study of modality are philosophy, discourse analysis and linguistics. For the purpose of the present study, we shall focus on modality using linguistic approach. Linguistic studies of modality, as noted by Sulkunnen and Torronen (1997:45), can be located in a variety of linguistic subdisciplines namely; morphology, syntax, semantics etc. According to Lillian (2008:2), morphology describes the lexical forms in which modality is manifested in different languages; syntax describes the complex syntactic configurations in which modality may be manifested, and semantics identifies modal meanings and explores the variety of ways these meanings may be expressed morphologically, syntactically, phonologically and pragmatically. We therefore attempt a review of few definitions of modality as presented by linguists.

Modality is said to be expressed through mood and it complements mood in the construction of interpersonal meanings. It is characterised to convey speaker's or writer's involvement in the propositional content of a given utterance. Besides, it is generally defined as the grammaticalisation of speaker's attitude and opinions. This position is further corroborated by Palmer (1986:14) who describes modality as the expression of the speaker's attitude or opinion regarding "the contents of the sentence" and Lyons (1977:452) that sees it as the expression of the speaker's attitude or opinion regarding "the proposition that sentence expresses."

In Halliday's Systemic Functional Grammar(SFG), modality is mainly located in the interpersonal components of the grammar and choices in this component are independent of grammatical choices in other components, for example, choices of transitivity in the ideational component (Halliday 2002:200). For Martins and David (2003), modality is a way of introducing attitudinal voice to discourse. It is a resource for grading polarity, for setting up positivity and negativity (Martin and David, 2003:49).

Several manifestations of modality in clauses have been discussed and examined in the literature (e.g. see Fowler, 1985, McCarthy, 1991, Halliday (1994, 2004), Martins and David,2003 Saheed, 2003, Toolam,1998, Bonyadi,2011 etc.). Prominent among these various manifestations of modality in clauses are modal auxiliary verbs(e.g. may, shall, must etc.), sentence adverbs(e.g. probably, certainly, regrettably etc.), adjectives, modal adverbs, evaluative adjectives and adverbs, reporting verbs and generic phrases. Others are modal adjunct, interpersonal grammatical metaphor, intensification, lexical verbal noun, negation and generic sentences. For the purpose of the present study, we shall consider and conceive of modality strictly as a venture in modal auxiliary verbs. We therefore attempt a review of modal auxiliary verbs and how they express modality in English discourses.

3.3.1.1 Modal Auxiliary Verbs

A modal auxiliary verb is a type of auxiliary verb that is used to indicate modality that is, likelihood, ability, permission, and obligation etc. Modal auxiliary verbs give more information about the function of the main verbs that follow them. They have a great variety of communicative functions. These range from possibility ("may") to necessity ("must"). Within these two ranges, two functional divisions have been identified namely; epistemic and deontic modalities.

Epistemic modality refers to the type of knowledge the speaker or writer has about what he is saying or writing. It deals with what the speaker or writer knows about the world. Besides, it implies that the speaker 'assesses' the probability that the proposition is true in terms of the modal certainty, probability or possibility (Downing and Locke 1992:332). Seven modal auxiliary verbs that are used to convey epistemic modalising meanings are *can, could, may , might, need, will, would*. Specifically, epistemic modality expresses possibility (e.g. may), likelihood, (can, could, might); necessity (e.g. must, should-compulsion, have to); prediction (e.g. will, would), certainty (will, would-weaker certainty); probability (e.g. may, might etc.). Examples below can be considered.

(i)   She can go (ability).
(ii)   You may go (permission).
(iii)   You should go (obligation).
(iv)   You must go (strong obligation).

Deontic modality, on the other hand, is concerned with the possibility and necessity in terms of freedom to act (including ability, permission and duty). Deontic modality means more specifically that the speaker or writer 'intervenes in the speech event by laying obligations or giving permission' (Downing and Locke 1992:332). This is resident in the examples below:

(i)   One *must* look into this matter in detail.
(ii)   *Shall* we negotiate peace now? or
(iii)   This experiment *should* be repeated.
(Downing and Locke 1992:332).

As noted by Halliday (1970:335), deontic modality can be regarded as "a form of participation of the speaker in

the speech event." It plays a significant role in the interpersonal process of negotiation of meaning. Deontic modality pertains to the use of language to express desires, wants, commands, obligations, undertaking and permission. In other words, deontic modality expresses permission (e.g. *may*, *can, may* is more formal in English than 'can'); obligation-necessity (e.g. *must*, *should*, *ought to*, *have to*); expectations (e.g. ought to); advisability (e.g. ought to); volitions-desirability (should, would) and prohibition (e.g. must, must not). It tends to share a great deal with performatives. Palmer (1986:56) points out that "by uttering a modal, a speaker may actually give permission (*may, can*) and make a promise or threat (shall) or lay an obligation (must)." Lillian (2008:5) points out however that classifying the modals is by no means unproblematic, since individual modals may function in more than one category. Borrowing examples from Palmer (2001:10),   Lillian (op.cit) points out that 'can' conveys permission in the sentences, *John can come in now*; but conveys ability in the sentence, *John can speak French*. Given these possible interpretations therefore, Lillian (op.cit.) notes further that it is necessary to consider the context in which each modal auxiliary appears and attempt to interpret which possible meaning is the most likely one. Given the fact that the present study has conceived of modality strictly as a venture in modal auxiliary verbs, our analysis of modality in the data (the problem statement aspects of research article abstracts) shall focus on every occurrence of overt modal auxiliaries, their semantic implications and functions in each of the generic structural elements of the problem statement in the data.

4.0   Analysis and Discussion

Our findings reveal that the research problems in arts-based research article abstracts are stated within the problem statement aspects(henceforth, PS) of the abstracts. The Problem Statements (PS) in the data are found to be characterised by five internal generic structural items. These are: Extending Research Frontiers (ERF), Accounting for Unsatisfactory Treatment of Research Object (AUTRO), Creating a Link between one Area of Knowledge and Another (CLAKA), Picking out Inexistent Work (PIW) and Picking out Inadequate Existing Work (PIEW). The generic structure of the problem statements (PS) is presented in the catalogue below:

(ERF) ^ (AUTRO) ^ (CLAKA)^ PIW ^ PIEW

The above catalogue implies that in the arts-based research article abstracts studied in the present work, Problem Statements (PS) are found to be used in achieving the five main research communicative purposes or goals listed above but to a varying degree and it is also dependent on the discursive conventions of particular fields and journals. The generic structure above shows that among the five generic structural stages that are found to characterise the problem statement (PS) in the data, only two namely; Picking out Inexistent Work (PIW) and Picking out Inadequate Existing Work (PIEW) are obligatory while Extending Research Frontier (ERF), Accounting for Unsatisfactory Treatment of Research Object (AUTRO) and Creating a Link between one Area of Knowledge and Another(CLAKA) are optional stages. The catalogue further shows that the five generic structural stages occur in sequence and that there is no restriction in terms of position where they occur. Besides, PIEW occurs more frequently than the rest followed by PIW.

Problem Statement (PS) in research article abstracts could manifest in Extending Research Frontiers (ERF) when a researcher, through their research works, move research forward beyond its present status, scope etc. AUTRO occurs when, in some cases, researchers state their research problems by accounting for the fact that a particular concept, research issue, phenomenon etc. is yet to be given satisfactory research attention or treatment. CLAKA manifests in research work when two related areas of knowledge are linked for the purpose advancing knowledge. PIW manifests when researchers employ their problem statements to indicate that no research work has been carried out in specific areas of knowledge. Below is an instance of abstracts in which the problem statement is used to pick out inexistent work.

Ex.1:

To increase male motivation to learn additional languages, studies have suggested teaching males in single-sex second language classes… *Despite the reported benefits of this unique arrangement, literature found no related research conducted in Canada or the United States. To address this lack of research, a study was conducted in the spring of 2008 to investigate…(Our emphasis)* **Source**: Canadian Journal of Applied Linguistics Vol.12, No.2, 2009

Picking out Inadequate Existing Work (PIEW) which has the highest frequency of occurrence in our data manifests when researchers indicate that existing works (studies) in a particular area of knowledge are not much thereby creating research vacuum or gap where the present and/or future researchers can come in. We can consider the example below.

Ex.2:

Scholars have debated how successful the government was in managing coverage of the ground war in Iraq through the embed system, *but few have surveyed the embedded journalists themselves to discover the degree they*

believe their press freedom was restricted…(Our emphasis)

In the example above, the writer has employed the problem statement through the use of the expression, 'but few have surveyed…' to pick out inadequacy of existing work. This has, therefore, created a gap in the existing literature in a particular area of research. When researchers (abstracts writers in our context) pick out inexistent work and inadequate existing works in their problem statements, they are implicitly justifying the significance or relevance of their (ongoing) works. This corroborates Hyland's (2000:17) claim that "writers often try to justify the relevance of their research by demonstrating that a "gap", problems, or deficiencies exist in… current applications, methods or knowledge". By so doing, the researchers not only justify the relevance of their works, they also write to seek acceptance by the academic discourse community. No wonder that Drew (2004:217) argues that:

> Academic writing is …[as] unremittingly rhetorical as any other: no matter
> how technical and seemingly detached a scientific paper might be, its
> discourse is designed to persuade readers of the objectivity of its methods
> and the correctness of its findings.

This position is further accentuated (emphasised) by Cava (2010:36) as she notes that "one of the major functions of abstracts is to persuade the reader to accept the validity of the writer's claims and to accomplish this purpose, the work of other writers (researchers) is constantly evaluated along the text distribution.

4.2. Mood and Modality in Problem Statements of the Abstracts

In the foregoing, we have examined and analysed the generic structural features of the problem statements in the abstracts. In this part, we discuss the mood and modality features of the PS as follow: First, we consider the mood.

4.2.1 Mood Structures and Types in Problem Statements in the Abstracts

Generally speaking, our findings reveal that the problem statements in our corpus are characterized by only indicative mood and this manifests the nature of the academic genre (in our context research article abstracts) which is generally and ultimately intended to give or disseminate information on research objective(s), methodology, research problems, findings among others. This corroborates Cava's (2010:24) observation that ''abstracts of research articles are mostly informative rather than descriptive because they provide information about the contents of the articles, its key facts and conclusion.'' Our findings reveal that indicative moods in the Problem Statements' (PS) segments in our data are generally or predominantly used for research vacuum or gap identification. Gap Identification moods in this study are operationally defined as those indicative mood structures that are generically employed for identifying the research vacuum or gap. Our classification and discussion of gap identification moods in the problem statements will be made in respect of the generic compliant functions that problem statements are used to perform in the data. Four major kinds of gap identification moods are found to characterize the data. These are: (i) Gap identification moods that are used in picking out Inadequacy of existing works (PIEW); (ii) those that pick out inexistent works(PIW); (iii) some are used in extending research frontiers(ERF) and lastly; (iv) others are used in accounting for unsatisfactory treatment of research objects(AUTRO). These are discussed in turn.

Gap identification moods that are used to pick out inadequacy of existing works are found to be predominant in the data. The preponderance of this mood type in the data is occasioned by the fact that researchers, in their bid to make their works acceptable to the academic discourse community often time create gaps or vacuums in the existing or previous studies by indicating that not much works have been carried out in a particular area of study. This, as our data reveal, is used to establish the relevance of and/or justification for an ongoing research. An example of mood structures that pick out inadequacy of existing works is resident in the extract below.

Ex. 3:

> A pressing concern in the education of deaf children is their lack of
> academic success as measured by literacy rates. Most deaf children finish
> high school reading below a fourth-grade level. Educational television
> programmes have successfully fostered preschool hearing children's
> emergent literacy skills. *As for preschool deaf children, however, there has
> been only limited research on whether this medium can be effective…* (Our
> Emphasis) **Source**: Sign Language Studies Vol. 11. No. 1, 2010.

The above italicized structure not only gives information (indicative mood). It equally identifies gap or vacuum by pointing out area(s) where the research work is inadequate – areas of 'limited research'.

Another category of gap identification moods that is found to characterize the problem statements in our data is that that picks out inexistent work. We can consider the examples below.

Ex. 4:

> *While much has been written on marketing to children, there remains a
> curious gap in the literature concerning marketing through children.* This
> study considers print ads for three brands of hip-hop clothing for children...

(Our Emphasis) **Source**: International Journal of Communication, Vol. 1, 2007.

Ex. 5:

…The approach of this article is to consider the concept of 'mediative journalism,' which means that first of all, links and differences between journalism and mediation as a conflict resolution tool have to be recognized. *An explicit link between mediation and quality journalism has not been tested yet*, although both show partly similar mindsets and attitudes concerning, for example, balances, the plurality of perspectives and critical reflection, as the article clearly shows. *(Emphasis mine)*
                Source: International Communication Gazette.

In examples (4) and (5) above, the authors (abstract writers in our context) have employed gap identification mood to pick out inexistent work in the academic literature in the field of communication. When researchers pick out inexistent work in their problem statements as contained in the above extracts, they are implicitly justifying the significance or relevance of their (ongoing) works. This corroborates Swales and Feak's (2003:39) claim that "abstracts across a wide range of academic disciplines need to project "interestingness" and "a convincing and authoritative image" in order to persuade readers of their relevance".

Some gap identification moods found in the data are observed to have been used to extend research frontiers and account for unsatisfactory treatment of research objects. As we have noted earlier on, when researchers extend research frontiers, they use their research works to move knowledge (research) forward beyond its present status, scope etc. Conversely, as our data reveal, researchers in the arts-based research article abstracts, accounts for unsatisfactory treatment of research objects as they state that a particular concept, research issue or phenomenon etc. is yet to be given adequate and satisfactory research attention or treatment. We can find below instances of gap identification moods that extend research frontier and account for unsatisfactory treatment of research objects in the data.

Ex. 6:

When U.S college students tell break up stories, they often indicate what medium was used for each exchange. In this article, I explore what this practice reveals about people's media ideologies. *By extending previous scholarship on language ideologies to media,* I trace how switching media or refusing to switch media contributes to the labour of disconnecting the relationship, determining whether phrases such as "it's over" are effective or not.(Our Emphasis) **Source**: Journal of Linguistic Anthropology Vol. 20, Issue 2, 2010.

Ex. 7:

…The articles aim to disturb any universal, inevitable or overly tidy segue between questions of belonging and claims of political segmentation. *Too often, the existing literatures move too quickly to an analysis that foregrounds only the worrisome dimensions of a politics of belonging, thus leaving little space for other interpretations.* To explore this dilemma, the article continues by exploring a land dispute in Bali Nyonga, north-west Cameroon… (Our Emphasis)
            Source: Journal of Linguistic Anthropology, Vol. 20, Issue 2, 2010

In example (6) above, the researcher, through the italicized gap identification mood structure, extend 'previous scholarship on language ideologies to media' whereas in example (7), the researcher indicates that 'only the worrisome dimensions of a politics of belonging' has been given attention to the neglect of other interpretations. Few instances of gap identification mood that are used to create a link between one area of knowledge and another are found in the data.

4.2.2   Modality Features in Problem Statements (PS)
Modal auxiliary verbs are scarcely found in the problem statements aspects of the data. Only one instance of possibility modal (may) is found to characterize the problem statements. This possibility modal, as used in the data, is resident in the example below.

Ex. 8:

...Considering the deluge of scholarship available on Larsen's other works, the small quantity of analyses focused on "sanctuary" suggest critics *may* be shying away from the text because of its blemished history…(Italics mine)
            Source: Journal of Modern Literature, Vol. 30, No.4, 2007

The possibility modal, *may* helps the researcher to pick out inadequacy of existing work in the field of literature

as it expresses the likely factors or reasons responsible for inadequacy of works on "sanctuary' (Larsen's Literary work). Besides, the use of *may* is also suggestive of the likely reason why critics are shying away from the text.

5. Conclusion

Our analysis in this study has revealed that the problem statements segment of the arts-based research article abstracts are characterised by five generic structural elements or items. These are: Extending Research Frontiers (ERF), Accounting for Unsatisfactory Treatment of Research Object (AUTRO), Creating a Link between one Area of Knowledge and Another (CLAKA), Picking out Inexistent Work (PIW) and Picking out Inadequate Existing Work (PIEW). The generic structural catalogue of the problem statements also reveal that some of these items are optional while others are obligatory. The analysis of the generic compliant functions of both the mood and modality structures in the data further reveals that the data are characterised by the presence of variants of gap identification mood categories (e.g. gap identification moods that pick out inexistent work and those that pick out inadequacy of existing works etc.) and modality categories (possibility modals) which further generally enhance the communicative goal of the research article abstracts as a genre of academic communication. In some examples of the abstracts that lack the obligatory generic structural items of problem statement, it is our contention that those abstracts are not well written.

This article therefore concludes that apart from complimenting the existing works in academic communication in general and research article abstracts in particular, our analysis has no doubt provided useful insights into how and where the research problems are stated in the abstracts. The analysis of the generic structure of problem statements in the abstracts will no doubt acquaint new entrants into academic discourse community to basic requirements of problem statements. This study contends that having the knowledge of generic conventions of problem statements is capable of assisting academics in writing better and acceptable abstracts either for conferences or for articles meant for publication in learned journals. This knowledge of writing better and acceptable abstracts (genre literacy, that is, "the awareness of how genres functions "and the generic conventions of research article abstracts (cf. Motta-Roth, 1999:94).) will in turn reduce the rate by which abstracts of young academics are being rejected in conferences and journal publications. While serving as useful material for academic discourse pedagogy, this article is aimed at finding lasting solution to the problems being encountered by young academics in writing their research problems..

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