A CORPUS-BASED ANALYSIS OF MODALITY IN THE COVID-19 ADDRESSES BY PRESIDENT AKUFFO ADDO

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Abstract:

This study aims at investigating the most used modal verbs and their semantic implications on the *COVID-19 addresses* delivered by Nana Addo Dankwa Akuffo Addo, the president of the Republic of Ghana. In all, 96,784 running words were culled from thirty (30) presidential addresses to build a specialised corpus for the study. Using the Antconc corpus software, 3.5.9 version, five (5) modal auxiliaries, that is, epistemic and non-epistemic (root) modal verbs were found to constitute the most frequently occurring modals in the *presidential COVID-19 addresses*. The analysis revealed five (5) thematic areas which these modal verbs covered - willingness, possibility, prediction, ability, and probability. These thematic areas give an indication that the president showed more commitment to dealing with the pandemic. This was evidenced by the number of times the president used non epistemic modal verbs which demonstrate ability, willingness, and possibility in handling the coronavirus pandemic. Again, the corpus revealed that the president's measures were on the back of some form of his existing knowledge in dealing with the pandemic.

Keywords: AntConc, corpus, COVID-19, epistemic, non-epistemic, modality, root

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1. Introduction

The outbreak of the Coronavirus pandemic in 2019 changed the way people across the globe live, behave and communicate (Semino, 2020b). It did not only affect the economies of the world but also kept the various leaders in the world busy. This culminated in the adoption of a series of strategies driven by speeches with a common aim of reducing the spread of the pandemic and possible eradication of the virus. The World Health Organization (WHO) was also kept busy with numerous studies, sequenced the DNA of the virus as well as proposed measures to mitigate the spread of the disease.

After its outbreak in Wuhan, China in 2019, the coronavirus pandemic spread across other parts of Asia, Europe, America, Africa, and the rest of the world. The deadly nature of the disease made it assume a pandemic status and was declared as such by the WHO in 2020. It is estimated that 655 million people across the globe contracted the disease with about 6.67 million fatalities (World Health Organisation Dashboard, 2022). The gruesome nature of the disease led to several preventive measures driven by the World Health Organization (Essam & Abdo, 2020). These measures include social distancing, wearing of a nose mask, washing of hands, and using of hand sanitizer. The speed with which the virus spread and killed eventually led to lockdowns and mandatory vaccination was later introduced by many countries. These measures were seen as akin to how people leave and therefore were very difficult to practice. To ensure effective compliance to the new ways of living, the world leaders pushed for administrative fiat driven by a series of addresses of which many leaders resorted to periodic addresses specifically tailored to curb the pandemic.

Ghana as a country recorded its first case on 12th March, 2020 and by the end of the year, 2022, Ghana had recorded a total of 170, 000 confirmed cases with a fatality of 1,461 (WHO and MoH websites, 2022). Following the outbreak of the disease in Ghana, the president of the republic resorted to some interventions approved by WHO as a standard to quell the spread of the disease. Because these measures were entirely new to the normal ways of social cohesion of the Ghanaian culture, they sparked a series of resistance. In an effort to get all to follow these protocols, the government of Ghana enacted laws on the coronavirus pandemic. These laws paved the way for lockdowns - ban on social gatherings; closure of land borders, tourism centers, hotels, nightclubs, and drinking bars; ban on religious activities; closing down of schools, and many other things. Following the aforementioned, the president resorted to periodic addresses dubbed *Fellow Ghanaians*, a strategy to get the citizens informed about the state of the Coronavirus pandemic in Ghana. These addresses became popular and still are receiving wider attention than any addresses delivered by the president. Despite the popularity of the COVID-19 addresses, there were meaningful challenges as to the motive behind them since earlier studies on speeches by political leaders have revealed that such addresses are masked by ideological motivations. The confusion that followed these addresses by the president became worse when the media attempted to offer interpretations that differed from one media station to the other. Both electronic and print media were all

victims of the meaning gap of what those addresses really communicated. The ordinary Ghanaian was equally much confused as to what exactly the addresses represented.

Studies have revealed that one of the challenges people find in a text is when it is couched with polysemous lexical items which perform interpersonal functions, thus, express modality (Palmer, 1992 & Coate, 1983). The significance of modality in language has made it one of the crucial subscribed linguistic items in pursuit of the meaning of a text. This is as a result of complexities associated with meanings of modality markers in a text as a result of its polysemous nature. In tandem with the above, Pullum (1992) has indicated that modality reveals the attitude of a speaker on some propositions. Scholars have revealed that modality plays a number of roles such as hedging, knowledge about an entity being addressed by a speaker, and commitment of the speaker, among many other things. Palmer (1992) for instance, revealed that the knowledge and control a speaker has on a particular situation may call for either epistemic or non-epistemic modality.

The idea of modality spans from the prototypical central modal verbs which include can, will, must, could, may, etc. These modal verbs express varied meanings such as willingness (volition), obligation, possibility, prediction, promise, etc. The hedging aspect of modality as well as other related communicative functions such as what has been mentioned earlier makes it difficult for people to fully understand a text which is predominantly couched in modality. The overall effect is that modality creates ambiguity in a text and by extension meaning gap between the speaker/writer and reader/listener (McEnery & Kifle, 2002 and Vold, 2002). The situation becomes worse if the text is a direct address to a group of people for pragmatic measures such as the COVID-19 addresses delivered periodically by the president of Ghana.

Most political leaders seek refuge from language through resources that create hedging and ambiguity (Opeibi, 2004; Abuya, 2011; Cap, 2006, etc.). The communicative effect of such speeches is the series of confusion in the minds of the addressees (Van Dijk, 2001; Wodak, 2002 and 2015). As indicated by Semino (2020b), certain words which relate to illness and health reflect a negative tone and can have adverse effects on the patient with the overall effect being that the patient may not feel better. In furtherance to this, Semino (2020b) and Savulescu, et al., (2006) have revealed that no matter how good an intention is, if one fails to identify the appropriate thing to communicate, that person may end up hurting the feelings of the one receiving the message. These ideas imply that choosing lexical items to address people in the time of a pandemic like the coronavirus requires the addresser to be circumspect so as to avoid creating fear, hate speech, and ambiguous speeches which can worsen the plight of the people. It is therefore significant for the people being addressed to fully understand such important addresses by their leader and to also appreciate the intentions of the leader.

In an effort to deal with the confusion that greeted the COVID-19 addresses, there is the need to subject one of the linguistic resources which has the propensity to create confusion of meaning between what the addresses say and what listeners also understand to scrutiny. It is based on this background that we have taken it upon ourselves to subject the COVID-19 addresses to scrutiny through a corpus-based

investigation in an attempt to offer empirical evidence about the most frequently used modality in the COVID-19 addresses, the types of modality used as well as their communicative functions because these polysemous items such as prototypical central modal verbs breed multiple interpretations of a text.

To fully appreciate a text and to drive home a whole meaning, Biber et al. (2014); Baker, (2009); Ngula, (2018) have recommended the use of corpus software as an entry reference since it has the natural tendency to offer objective interpretation of a text through dominant linguistic features in a corpus. Though relatively new, the rhetoric of the COVID-19 addresses has led to some studies of which few (of such studies) adopted a corpus approach. The attempt has been to contribute to the growing search for meaning as well as the communicative function of coronavirus discourse as a powerful tool recognized globally to curb the spread of the pandemic.

Previous studies have been done on Covid 19 speeches by presidents and other stakeholders from different parts of the world (for example, Pantelia, 2022; Al-Nusairat & Al-Khawaldeh, 2021; Kristianti, 2020; Sultan & Rapi, 2020; Liando et al., 2022, etc.). Liando et al., 2022, Sultan & Rapi, 2020, Salayo, 2020, etc. looked at these presidential speeches from a critical discourse analysis point of view. Liando et al. (2022) for instance, did a critical discourse analysis of the Indonesian president's speech on Covid-19 handling in 2022. Others also focused on the syntactic structure of the speeches. For example, Pantelia (2022) looked at the use of syntax and lexicon structures in political discourse by focusing on Boris Johnson's Speeches on COVID-19. Existing literature thus proves that there is limited work done on the use of corpus to study the covid 19 speeches let alone the aspect of modality. The literature shows that apart from Kristianti (2020) who looked at interpersonal meanings of modality in COVID-19 speeches by Jacinda Ardern, Prime Minister of New Zealand, none of the earlier works explored this phenomenon. However, it is clear that Kristianti (2020) focused on a non-Ghanaian president, and also did not employ corpus methods and tools in his analysis of the data. There is therefore the need to carry out a study that will fill this lacuna by carrying out a corpus-based analysis of modality in the COVID-19 addresses by President Akuffo Addo in order to understand how Akuffo Addo responded to the pandemic in Ghana.

2. Research Objectives

1) To explore the most frequent prototypical modality markers in the COVID-19 addresses delivered by President Akuffo-Addo.
2) To examine the patterns and meaning implications of the modality markers in the COVID-19 addresses delivered by President Akuffo-Addo.

2.1 Research Questions
1) What are the most frequent prototypical modality markers in the COVID-19 addresses delivered by President Akuffo-Addo?
2) What are the patterns and meaning implications of the modality markers in the COVID-19 addresses delivered by President Akuffo-Addo?

3. Literature Review

The outbreak of the coronavirus pandemic has not only kept health practitioners and leaders of the world busy but also linguists who have been assembling discourses around COVID-19 in an effort to build pandemic corpora so as to contribute to the study of the pandemic from a linguistic perspective (Debnath & Bardhan, 2020). One genre that has received wider attention is the language of social media platforms. The study of Essam and Abdo (2020), for example, revealed that of all the contents related to the COVID-19 which was posted by Arab Twitter handlers, issues on religion and health were the most frequently occurring topics. In a similar study, Joharry & Turiman, (2020) also contend that the majority of online users in Malaysia posted content that tagged COVID-19 with negative expressions. In furtherance to the above, Odlum et al., (2020), in a related study of posted contents of African Americans found that such groups have a positive attitude towards the fight against the epidemic.

By utilizing the database analysis software AntConc 3.2.4w on self-built corpora, Hangyan, et al. (2021) analyzed the news reports of different stages of COVID-19 in China and the UK using the China Daily and The Guardian, respectively, and attempted to reveal the discourse related characteristics in the two media, together with the discussion on their possible relations to the pandemic-controlling practices. The findings showed that China Daily used more objective and neutral words in the descriptions of COVID-19 and expressed more positive attitudes in fighting against the epidemic, whereas The Guardian used more negative words in describing the pandemic and words with weak restricting force when reporting policies concerning the control and prevention of the COVID-19 pandemic. Moreover, the comparison between the discourse before and after the lockdown demonstrated that the descriptions of COVID-19 in the UK media transformed into a more objective and neutral one than before with increased use of words such as mercenaries, insurgence, curfew, etc. which have semantic properties of restriction and social conflict.

Also, Napanan (2021) analyzed the application of if-conditionals in expressing options and possibilities during the COVID-19 pandemic using data on the Coronavirus Corpus developed in May 2020 by Mark Davies. The extracted if-conditionals were divided in accordance with Puente-Castelo's (2017) framework of if-typology. Secondly, grammatical aspects of all the verb strings were analyzed in terms of tense and aspect, sentential modality, and voice. It was discovered that speech act conditionals—relevance conditionals—were most commonly applied to provide specific suggestions to deal with the pandemic. The second and third-ranked choices, scope-restricting conditionals and hypothesizing conditionals also helped to specify scopes and definitions and to emphasize possibilities and predictions or statistical estimates based on evidence, respectively. The grammatical aspects also corresponded to the COVID situation and helped to convey messages in accordance with the if-conditional functions. The results suggest that the if-construction provides communicative functions fitting various contexts relating to the pandemic.

Cox (2020), an instructor of medicine and journalism, admonished people to be circumspect in using metaphoric language which connotes violence such as war metaphors in such times of panic and fear as witnessed in this era of the coronavirus pandemic. As noted by Keller and Semino (2020), it is important to resort to alternative metaphors rather than words that reveal war in times of a pandemic. Semino (2020b) in contributing to the growing argument in the area of health discourse asserts that certain words which relate to illness and health reflect a negative tone and can have an adverse effect on the patient with the overall effect being that the patient may not feel better. From the perspective of Savulescu, et al. (2006), no matter how good an intention is, if one fails to identify the appropriate thing to communicate, that person may end up hurting the feelings of the one receiving the message. Drawing from the studies above, the present study can argue that as medication is very crucial in times of a pandemic, language use is equally important just like pharmaceutical products and other related preventive measures. From the foregoing, it is clear that one of the ways to deal with a pandemic is speech devoid of fear, panic, and anxiety. It is upon this that makes the study of the COVID-19 addresses significant since existing related studies have proved it worthy of researching. However, to know how bad language complicates health situations in times of pandemic as revealed by Semino (2020b) means the addresser knows and understands such language. Though the present study is analogous to studies such as Semino (2020b); Potts and Semino (2019); Savulescu, Foddy, & Rogers (2006), it departs from them in terms of the focused linguistic features, the genre of study as well as the driver of the texts under study. While the existing studies focus on metaphor, if clause, and hate speeches, the present study takes a look at the prototypical central modal verbs (modality or modulation) as described by (Palmar 1992) in the presidential COVID-19 address in Ghana.

In other related studies, Khalfalla & Keprianto (2021) carried out a cross-cultural case study that examined the speeches of five politicians made up of the presidents of Sudan, Brazil, USA, Indonesia, and the British Queen. The data for the study were sampled from the public-related speeches on the COVID-19 pandemic which were uploaded on YouTube and were guided by Critical Discourse analysis. The study revealed that there are considerable individual and cultural differences among these politicians based on the direction of the discourses especially, in the context of power and media influence.

In another related study, Igbal et al. (2020) also explore Pakistani Premier Imran Khan's addresses to the nation on the awareness about the causes, effects, precautions and solutions of the novel Coronavirus (COVID-19). The study just like Khalfalla & Kepriento, (2021) adopted a qualitative method and analysed along Aristotle's persuasive and rhetorical devices, integrating them with Socio-political Discourse Analysis (SPDA) theory. The study revealed that the Premier consistently used stable linguistic features to persuade the people to follow the precautionary measures as the only cure for the pandemic. Again, it was found that the Premier employed defensive arguments to persuade his people to follow the lockdowns.

In a similar study, Al-Nusairat & Al-Khawaldeh (2021) critically examined Biden's Presidential speeches addressing the COVID-19 pandemic and its effects on education and the economy. The focus of the study was to understand how language is used as a tool to build different identities, carry out several practices, make something significant and reveal hidden thoughts. Theoretically, the study employed Gee's (2011) model which focused on both grammatical and lexical aspects of the speeches. The study found that Biden used grammatical and lexical features skillfully in almost all of his speeches focusing on the American Rescue Plan, the vaccination programme, and how to confront natural disasters like COVID-19 with its effects to build different identities and highlight the importance of social and political aims.

Liando et al. (2022) also examined the speeches of the Indonesian president on COVID-19 handling in 2022. The study focused on macro structures, superstructures and microstructures contained in the text of the president's speeches to reveal the elements and aspects of the discourse and the intentions of the president employing van Dijk's (2006) critical discourse analysis. The data revealed that the President exploited three dimensions of critical discourse analysis in his speeches characterized by action, context, history, power, and ideology.

The works reviewed so far (Khalfalla & Keprianto 2021; Igbal et al. 2020 Al-Nusairat & Al-Khawaldeh 2021 and Liando et al. 2022) adopted approaches and methods which lend themselves to subjective interpretation of texts. For instance, the use of CDA or qualitative approach is driven by intuitive manipulation of data and therefore leads to the imposition of meaning on the data. It is believed that such methods and approaches used by the studies are not based on empirical evidence from the texts but on the researchers' intuition. We argue that the discourse on COVID-19 is scientific and therefore must be studied through a linguistic approach that is more scientific where findings are based on empirical evidence from the text. It is based on this argument that we believe the use of the corpus approach will offer more evidence-based findings where intuition is minimal and meaning is objective. Also, we hold the view that since the speakers behind the COVID-19 discourse are not experts, their speeches were based on either their existing knowledge or the control they had over the subject. We hold the assumption that the use of modality which falls under the interpersonal tenet of Systemic Functional Linguistics (SFL) is more appropriate to really appreciate the intent of the speakers. The forgoing argument shows that there are gaps in the literature in terms of methodology, approach, and theory. This therefore requires the present work which looks at the discourse around COVID-19 by a political leader from a different approach, method, and theory.

3.1 Theoretical Framework

The theory of modality falls under descriptive grammar which focuses on tense and aspect and often concerns itself with events and situations that are reported in utterances (Coate, 1983; Palmer, 1986; Bybee, Perkins, and Paglinca, 1994; Downing & Locke, 1992, etc.) As an offshoot of SFL, Modality falls under the interpersonal meta-discourse function (Halliday, 1994). Thus, it shows how language is used as a resource for

interaction by making people engage with others and also talk about how they feel as well as their worldview about events in the world (Halliday, 1994; Halliday & Matthiese, 2004; Ngula, 2015). To Flowerdew (1998), the interpersonal function of language deals with the speaker's attitude towards a proposition, and this is made possible through modal verbs (may, can, could, should, will, etc.).

The complexity of this theory has led to several perspectives. For instance, McEnery & Kifle, (2002) and Vold, (2002) are unanimous in their thinking that modality evokes senses such as possibility and certainty (epistemic) while modulation reveals senses of obligation and permission (deontic). To Biber (2006), modality allows speakers to assess and convey their feelings such as their attitude toward a statement, how sure they are about the statement, and their source of information as well as their point of view on a proposition. The linguistic resources which carry modality are semi-modals, modals, complement clauses controlled by stance verbs, adjectives, nouns, etc., (Flowerdew, 1998; Biber, 2006; Ngula, 2015).

Palmer, 1992) is of the view that "modality" is a grammatical notion that concerns itself with how events and situations in an utterance are reported by a speaker. It follows that varied linguistic resources create modality which includes modal verbs (Downing & Locke (1992: 383-384). To Quirk et al. (1985: 219), there are "*constraining factors of meaning*" which are described as intrinsic and extrinsic modalities. The implication is that some of the meanings are human control - oriented and these include "permission", "obligation" and "volition" which are described as deontic according to Vold, (2006); Palmer, (1992), and Hyland (2013) and are intrinsic. Contrary to intrinsic modality is the extrinsic which is not controlled by humans and expresses "possibility", "necessity", and "prediction" which in form is epistemic, using Downing & and Locke (1992) and Palmer, (1992) terminology. The intrinsic and extrinsic views of modality led to their classifications into epistemic and deontic.

The above arguments imply that modality has been broadly categorised into probability and certainty as revealed by epistemic or proposition (Holmes, 1988; Hyland & Milton, 1997; Hyland, 2001; McEnery & Kifle, 2002; Vold, 2006, etc.) while obligation and inclination described as modulation are associated with deontic (Halliday & Matthiessen, 2004: 147). Huddleston & Pullum (2002: 178) examined the ontological views of both epistemic and deontic modalities and showed that epistemic revealed the speaker's knowledge about an utterance/proposition while deontic expressed imposition of obligation, prohibition, or permission in interaction. From the foregoing discussion, it is clear that both epistemic and deontic have some relation with the two notions of possibility and necessity.

Palmer (1990: 36), included a third category of modality named dynamic modality. This expresses the speaker's volition to the proposition or his/her ability in the proposition. The dynamic modality is different from both epistemic and deontic in the sense that the two concern themselves with the speaker's attitude and opinion while the dynamic modality expresses ability and wiliness

However, related studies such as Coates & Leech, (1980); Kratzer & Sweetser, (1985), and Coate, (1983) have questioned the propriety of the three-way classification

since there is a possibility of indeterminacy of the meaning of modal verbs and therefore proposed a two-way classification which are epistemic and root (non-epistemic) modalities. Coate's (1983) argument is that the epistemic modality encompasses all the propositions born out of the idea of prediction, probability, possibility, etc. while the non-epistemic or root modality evokes permission, obligation, ability, etc. Thus, all the modality senses that are epistemic are based on the speaker's knowledge about the proposition, and that reveals the speaker's commitment to the truth condition of the proposition. Therefore, both evidential and epistemic are all based on the speaker's foreknowledge about the truth condition of the proposition and therefore must be treated as one while the non-epistemic or root modality is based on the speaker's control over the proposition. Therefore, all that is not epistemic are classified under root or non-epistemic.

Drawing from the related theoretical perspectives so far, the present study subscribes to Coate's (1983) two-way classification of modality for describing meanings of modal verbs. This spans from the idea that it offers a clear way of describing the two modalities - epistemic and non-epistemic. Also, this two-way classification has been found to lower possible indeterminacy of meaning which has characterized other classifications, especially the three-way classifications. In effect, we have classified all the modals into epistemic and non-epistemic as put fore by Coates & Leech, (1980) and Coate, (1983).

3. Methodology

The study is corpus-based and therefore a single specialised corpus was built from the sampled COVID-19 speeches of President Akuffo-Addo. Biber, (1998) has averred that in corpus methodology, the choice of sampling is the sole decision of the researcher since huge data are always involved in order to ensure representativeness and generalisation of findings. Thus, the data for this study entails all the COVID-19 addresses of President Akuffo Addo as at the time we started this study.

3.1 Corpus Building Processes and Compilation
Data for the corpus compilation was made of thirty-two COVID-19 addresses delivered by the president between March, 2020 to December, 2021 culled from the website of the Ministry of Information. The speeches were in MS Word format so they were all converted into plain text to make them readable by the corpus software. A raw specialised corpus of ninety-six thousand, seven hundred and eighty- four running words was built. The corpus was made up of 2300 tokens and ninety-six thousand, seven hundred and eighty-four types. It is worth noting that in corpus compilation, the number of word types is the same as the total number of words for building the corpus.

The summary of the specialised corpus has been presented in a tabular form below:

Types	Tokens	Total number of words
96784	23000	96784

3.2 Procedure for Corpus Analysis

The corpus was analysed for the most frequently occurring modal verbs in the corpus using the AntConc version 3.5.9. To carry out the quantitative count of the modal verbs and to respond to the research questions, certain boundaries were set to determine which modal verbs were considered numerically strong in terms of the frequency in which they occur in the corpus. In line with these boundaries, all modal verbs with a frequency of fifty-two (52) and below were considered numerically insignificant for the analysis. Again, modal verbs with negative particles or markers were not considered for the study. This decision was taken to avoid indeterminacy of meaning (Coate, 1983 Dawning & Locke, 1992). After obtaining the desired modal verbs, they were represented in a tabular form as they appeared on the AntConc and were supported with evidence from the AntConc software. Through these limitations, we were able to arrive at the most frequent modal verbs in the corpus that answer research question one. The next phase of the analysis was a qualitative inquiry into the pattern and the communicative functions of the modal verbs through the context in which they occurred. This was made possible through the concordance and the file view tabs of the AntConc corpus software.

4. Findings

4.1 The Most Frequently Occurring Central Modal Verbs

From the AntConc corpus software, five modal verbs were found to dominate the corpus and therefore have numeric significance for the study. These modal verbs constitute the prototypical central modal verbs which exhibit a wider range of meanings as expressed in modality (Ngula 2015). Also, the frequency count of the target linguistic feature under study has been found as one of the tenets of doing corpus-based studies (Baker, 2006; Biber, 2012; Dickson, 2015; etc.) The table below offers the rank and the frequency of the modal verbs which have numeric strength for the study.

Table 1: Rank and the frequency of the modal verbs

Rank	Frequency	Word
14	345	Will
54	104	must
88	62	can
100	58	may
110	53	should

Source: AntConc software.

From the table extracted from the AntConc software, the modal verb **will** constitutes the highest occurring modal verb with a frequency rate of 345 and ranked 14th most frequently occurring lexical item in the corpus. This is followed by **must** with a frequency rate of 104 and also ranked 54th most frequently occurring lexical item in the corpus. In

all the five, the modal verb **should** was captured as having the least frequency rate of 53 and ranked 110th most frequent lexical item in the corpus under study. The image below is a concordance that shows the dominance of the modal verb **will** in the corpus.

Figure 1: Concordance lines showing the occurrence of the modal will in the corpus
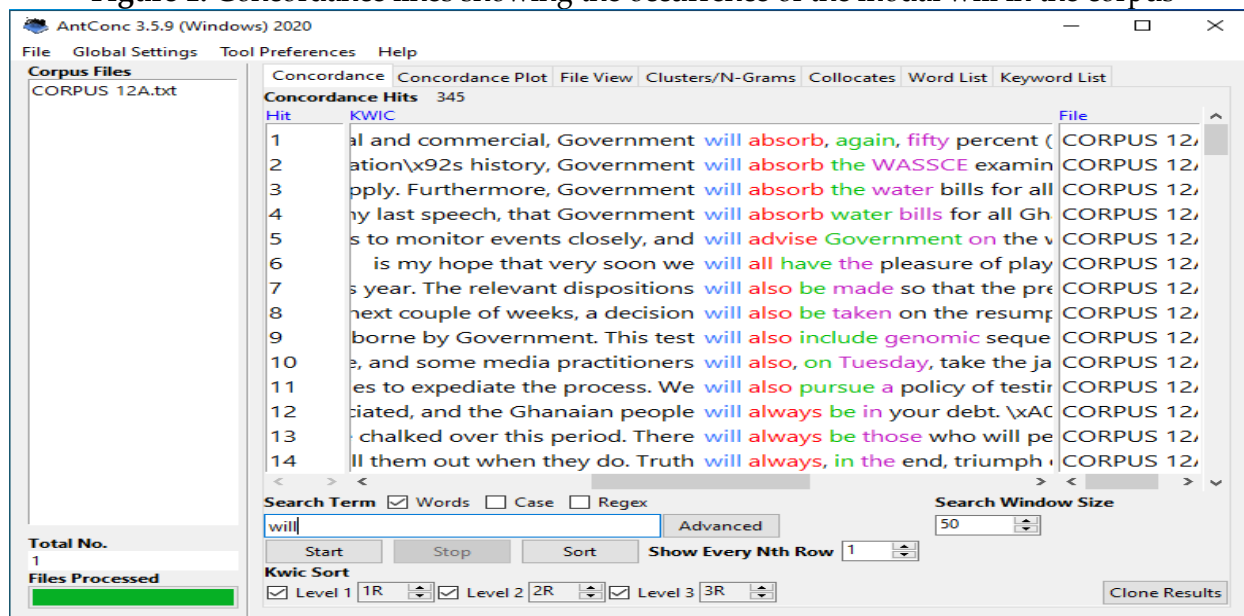
4.2 Communicative Functions of the Modality Markers in the COVID-19 Addresses
Biber (2014) has proposed two tenets for carrying out corpus studies. The first tenet is the quantitative count of the linguistic feature and the second is the communicative function of that linguistic feature in the context in which it has been used. In this section of the analysis, we will discuss the communicative function of the five modal verbs through the sentences they occur which serve as units of analysis.

A. Will
The modality marker *will* has been found in the corpus to reveal different ranges of meanings in the propositions in which they occur (Coate 1983; Lock & Downing, 1992; Pullum, 2002; Palmer, 1992; etc.). These meanings are Prediction, promise, willingness, etc. which will be discussed in the subsequent paragraphs.

- **Prediction**

From the file view tab, the modal verb *will* has been found to demonstrate predictive use. Below are extracts that support this assumption:
1) Of the remaining fifty-nine (59) confirmed cases, fifty-three (53) are receiving treatment and are doing well and they _will_ be discharged.
2) These additional measures, together with those earlier announced, are what _will_ help us defeat the virus
3) It _will_ give us the opportunity to try to halt the spread of the virus and scale-up efficiency contact tracing of persons we have come into contact with infected persons.

4) Together, all these protocols _will_ prove effective in helping each one of us to avoid contracting the virus

In extracts 1-4, it is clearly seen that the addresser has no absolute knowledge on the state of the virus and the disease. To avoid emphatic statements which their outcomes are unknown to him, he resorts to foretelling the future through predicting what is likely to happen. The predictive semantic value of the modal **will** has been reported in Palmer (1992) and therefore this study has also confirmed its use.

- **Promise**

One of the meanings that was revealed by **will** in the propositions is promise. The corpus has shown that the president often exploited the modal verb to give assurance to his subjects through promises. According to Plamer (1992), one of the modality senses of _will_ is to reveal the sense of promise. Extracts 5-7 below offer some evidence to support our claim:

1) We _will_ use the military and police to assist health authorities to expedite the process.
2) We _will_ also pursue a policy of testing all contacts of people who tests positive.
3) An intensive public health education and community awareness on social distancing and hand washing _will_ be carried out.

- **Willingness**

Another communicative function that was revealed by _will_ is willingness. The president through the modal **will** also demonstrate his commitment to fighting the Coronavirus. The president's willingness is also revealed in the choice of the pronoun _we_ which shows his commitment to joining hands with his citizens to fight against this pandemic. The extracts below are pieces of evidence to show the willingness of the addresser to his statements:

4) We _will_ begin stage one of the process of easing restrictions.
5) We _will_ only proceed with this staggered opening up of our country when it is safe to do so.
6) In the coming days, Government _will_ visit the two major laboratories that have been charged to carry out the COVID-19 test to interact with the workers there and to thank them for the brevity demonstrated so far.

B. Must

The second modal verb which marks modality in the corpus is **must.** From the file view tab, different shades of meanings have been revealed by _must_. Below are the meanings and the extracts which support them.

- **Obligation**
6) … And _must_ take it into account in dealing with the disease while meeting all the six (6) key guidelines on the most effective ways of combating the pandemic.

7) This, in essence, means that everyone resident in these areas _must_ stay at home for the next two weeks.

8) Passengers' vehicles, such as trotro and taxi _must_ reduce the number of passengers in order to observe appropriate social distancing and hygiene protocol

The extracts, thus, 11-13 reveal that in an effort to get his citizens to comply with the protocols, the president resorted to _must_ which revealed a strong obligation on the part of the addressee. The extracts also show that the obligation is not confined to the addressee alone but to the listeners as well as anyone who has the obligation to conform.

- **Necessity**

The modal _must_ again has a function of necessity in propositions. The examples below support this assertion:

9) However, if you _must_ go out, it must only be to get essential items such as food, medicine, water, and undertake banking transactions.

10) It is sad, it is unfortunate and it _must_ end

11) We _must_ ensure that the end of this exercise will lead to a new attitude towards cleanliness in our surroundings. These enhanced hygiene protocols _must_ become a part of our daily lives.

12) The law _must_ be upheld.

C. Can

The next modality marker revealed in the corpus is _can._ The modal _can_ has also been found in the corpus to express ability as captured by Pullum (2002). Ability here shows things that the president believes he has the capability to handle. Below are the extracts that give an indication that the modal _can_ was used to signal ability on the part of the speaker.

13) We _can_ and must preach it

14) Conferences and workshops _can_ take place with all the appropriate protocols

15) Each of us _can_ help to contain the spread if we continue to practice the measures of social distancing, washing of our hands etc.

16) I ask this evening that we remain steadfast in our adherence to the protocols, so we _can_ overcome this third-worse off infection.

17) Let me state, as clearly as I _can_.

D. May

Another modal verb is _may_ with varied meanings that come with it. Palmer notes that _may_ expresses a wider range of meanings such as possibility, obligation, and possibility. However, in this corpus, it has been revealed that the president used _may_ to demonstrate only the probability of the situation in his address:

- **Probability**

One of the meanings, according to Palmer (1990) revealed by *may* is probability. Some instances of occurrences of *may* in the corpus reveal that the president used it to show the probability of the subject being addressed. Extracts 23-25 below prove the claim above:

18) All the remaining two hundred and fifty-seven patients are responding to treatment and they *may* be discharged soon,

19) Eventually, it *may* be said that the number of our infections is still, relatively low if we act now, we have a chance of preventing an escalating of our number,

20) Government *may* take delivery of PPEs in the coming days and all health facilities, MMDCs, schools, and other public places *may* receive supplies.

E. Should

At this point, it is important to mention that the modal *should* also exhibit layers of meanings in the corpus. Downing & Locke (1992) has reported that *should* is used in varied ways to signal either obligation or probability. From the corpus, it is found that *should* is used to demonstrate both obligation and probability. These two have been treated separately with extracts that support their occurrences.

- **Obligation**

Like *must*, *should* has also been found to demonstrate obligations in propositions. This means that the speaker uses it whenever he or she wants to commit the listener to a course. The extracts below demonstrate that the modal *should* lays obligations:

21) We *should* all be in this fight together and there is nothing to be gained with widespread fabrication and distribution of false information

22) Each one of them *should* do so.

23) We *should* all familiarize ourselves with them and apply them as RCC of Greater Accra, Ashanti and C/R are demanding of their residents.

24) A consensus has emerged from these consultants that we *should* embark on a strategic, controlled, progressive, safe …

25) There *should* be no fear of stigmatization or embarrassment with being diagnosed with Covid 19.

- **Probability**

Another communicative function of *should* as reported by Downing & Locke (1992) signals probability. This implies that the speaker has no control over the theme of the proposition. The extracts below confirm that *should* was used to show probability.

26) *Should* anyone be arrested by the security agencies disregarding this directive?

27) But *should* that become necessary i.e; *should* the number of active cases continue?

28) *Should* you at any point feel unwell or exhibit the most common symptoms of COVID-19?

5. Discussions of the Findings

From the corpus, five modal verbs were considered to be numerically significant for the study. These modal verbs have been highlighted in Table 1. Further probe into the semantic implications of these modal verbs through modality shows that they all constitute polysemous relations. For instance, the modal *will* was found to express meanings such as promise, willingness, and prediction. Others such as *should* and *must* were also found to express meanings such as possibility, probability, necessity, etc. The implication is that the modal verbs expressed both deontic and epistemic senses. The various modality categories, thus, deontic and epistemic have been tabulated below:

+epistemic sense	Non epistemic or root sense
will	must
may	can
should	should

Coate (1983) has opined that modality is expressed in two ways which are epistemic or non-epistemic senses. In the corpus under study, the five modal verbs confirmed the assertion by Coate (1983). For instance, modal verbs such as *will, may* and *should* were used based on the idea of the knowledge of the speaker. The epistemic background of the speaker on the Coronavirus pandemic made him resort to *will, may* and *should* to signal prediction, promise, and willingness. These modal senses give an indication that the president has no control over the pandemic and therefore cannot make emphatic statements about it.

In contrast to the epistemic sense of the modal verbs, others such as *must, can* and *should* were found to demonstrate non-epistemic sense as a result of the control the speaker has over the proposition, i.e., Coronavirus pandemic. The root or non-epistemic senses found in the corpus as revealed by the modal verbs such as *must, can* and *should* were ability, obligation, and possibility. These findings of the study echo the earlier positions of Pullum (2002); Palmer (1992); Lock & Downing (1992); Coate (1983), etc.

6. Conclusion

The study has established the fact that modal verbs reveal certain intentions of speakers in propositions. This finding shares an affinity with the wider range of meanings revealed by the five modal verbs that were explored in the study. Again, there is enough evidence to make a claim that the president's addresses on the pandemic were as a result of his knowledge; thus, those he has control over and those he has no control over. The element of control over the propositions led to the use of both epistemic and deontic modalities.

The study has also demonstrated that modal verbs have the propensity to save the integrity of a speaker as they evoke an element of hedging, a linguistic property that allows a speaker to avoid a blame.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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