AN ANALYSIS OF STRESS USING METRICAL GRID IN THE PRONUNCIATION OF SELECTED FEDERAL RADIO CORPORATION OF NIGERIA AND VOICE OF NIGERIA NEWSCASTERS

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Abstract

The research seeks to examine the stress usage using Metrical Grid in the pronunciation of selected newscasters of the Federal Radio Corporation of Nigeria and Voice of Nigeria. Some related literature were reviewed. The Metrical Grid Approach by Liberman and Prince was adopted as a theoretical framework. Three newscasters were selected from each radio station. The newscasts were recorded, transcribed and examined. Twenty (20) words that comprised bisyllabic and polysyllabic words were tested from each of the newscaster, while five sentences/phrases were used to test the stress at the sentence/phrase level. The findings of the research showed that both the newscasters from FRCN and VON have fewer problems in the stress usage of bisylllabic words. However, in the polysyllabic words the result indicated that the newscasters encountered difficulties as none of them got 80%. The study also revealed that there appeared to be major problems in the observation of the sentence/phrase stress shift, as only three (3) newscasters out of the six (6) got more than 50%. The findings also indicated that neither ethnic background nor educational attainment was responsible for the poor stress placement by the newscasters.

Keywords: Metrical grid, newscasters, stress, polysyllabic

Introduction

This study analyses the stress usage using Metrical Grid in the pronunciation of Selected Newscasters of Federal Radio Corporation of Nigeria (FRCN) and Voice of Nigeria (VON). Stress refers to the

increased prominence associated with a certain syllable or syllables in a prosodic domain. The study of stress is complicated by the existence of considerable cross-linguistic variations in the acoustic correlates of stress, the domain over which stress is assigned, the presence of secondary stress, and the relationship between stress and other types of prominence such as stress pitch (Gordon, 2010). Nevertheless, the formal investigation of stress has been a fruitful area of research in the phonology literature since the seminal work on generative metrical stress theory in the 1970s and subsequently Liberman and Prince (1977). One feature of the Metrical Stress Theory is the relative ease with which analyses may be computationally implemented. The researcher therefore adopted the theory to examine the stress placement in relation to the newscasters.

Newscasters in Nigeria are expected to be good speakers of the language they use (in this case English). Unfortunately, most of the newscasters commit mistakes related to stress in pronunciation. The researcher observed that the standard of spoken English performance of the majority of these newscasters has fallen considerably. Stress is one of the suprasegmental features. Evidence has shown that the news readers' stress placement affects intelligibility and comprehensibility. It has also been observed that their phonological problems include stress, syllable and intonation units. It seems that the standard of spoken English is low among the electronic media practitioners.

Technology has dominated the world by extensive improvements in audio/visual mass media such as TV and radio. Television and radio are not just entertainment tools anymore, but can be used as pedagogically valuable technology that can provide authentic language input for language learning (Bahrani and Sim, 2011). Shehu (2016) highlighted that electronic media, radio and television, is known as one of the arms of the mass media that have the capacity of transmitting messages and information from one part of the world to another. Transmission of messages and information through television and radio creates the awareness that strengthens the feelings of togetherness. The invention in information technology,

especially in the areas of radio and television, has been described as a potent enabler of globalization.

Brinton and Gaskill (1987) argue that using television and radio news utterances as teaching material has proved effective in improving listening comprehension of EFL learners having difficulty in dealing with comprehending news utterances. Poon (1992) affirmed that listening to television and radio news material seems to be more beneficial than listening to non-news material.

The aim of this research is to analyse stress in the pronunciation of selected newscasters in Federal Radio Corporation of Nigeria (FRCN) and Voice of Nigeria (VON). The study has the following objectives:

1. To examine whether or not Federal Radio Corporation (FRCN) and Voice of Nigeria (VON) newscasters differ in their stress placement in pronunciation.
2. To find out whether there is significance difference in the shifting of stress by the FRCN and VON newscasters.
3. To determine whether or not educational attainment has any particular bearing on the usage of stress in pronunciation by the newscasters.

The research questions guiding this study are:

1. To what extent do newscasters in the Federal Radio Corporation (FRCN) and those of Voice of Nigeria (VON) differ in the usage of stress in pronunciation?
2. To what extent do newscasters of FRCN and VON newscasters differ in shifting of stress?
3. Does educational attainment has any effect on the stress usage by the newscasters in the area of the study?

The research restricted its scope to selected newscasters in Federal Radio Corporation of Nigeria and the Voice of Nigeria (VON). What the study attempts to do is largely to describe and compare the stress placement of the radio stations using the metrical grids approach. Two areas were considered in the analysis of the

study. The placement of stress at the word level and the level of simple sentences in Standard English usage. Six (6) news items were intended to be randomly selected for the purpose of the study that is three (3) from each radio station.

Theoretical Framework

There are so many theories that can be used for the study of correct stress placement. For example, Jones (1975) suggested that stress is not predictable by rule and must be learned word by word. The second view is that one must try to find a way of writing rules that express what native speakers naturally tend to do in placing stress, while acknowledging that there will always be a substantial residue of cases which appear to follow no regular rules (Roach, 2009). On his contribution, Giegerich (1992) presented a clear analysis of English and word stress which include a useful explanation of strong, weak, heavy and light syllables. Chomsky and Halle (1968) came up with another theory which they called generative phonology. The main aim of generative phonology is to explore and understand the nature of the linguistic knowledge. Generative phonologists and the American structuralists were challenged by metrical phonologists. The argument of metrical phonology was that the latter's analysis of stress was based on the prosodic prominence as a feature that applied to individual phonemes (segments) or syllables.

This study, therefore, uses metrical phonology as its theoretical framework. Metrical phonology is a theory of stress or linguistic prominence. The innovative feature of this theory is that the prominence of a unit is defined relative to other units in the same phrase (Liberman and Prince 1977). The major achievement of metrical phonology is to consider phonological strings as not merely linear sequences, but as having hierarchical organization (based on the syllable) and to extend such a hierarchically based analysis to stress. The first major work in this area was a paper by Liberman and Prince (1977) (henceforth, LP).

Metrical phonology holds that stress is separate from pitch accent and has phonetic effects on the realization of syllables beyond their intonation and has phonetic effects on their duration and amplitude. The perceived stress of a syllable results from its position in the metrical tree and metrical grid for the phrase it appears in. The main aim of metrical phonology therefore, is to highlights on the relation of prominence between constituents (Hogg, R. and Mccully, C. 1987).

Metrical Trees

Linguistic prominence in metrical phonology is partially determined by the relations between nodes in a branching tree, in which one node is strong(S) and the other node or nodes are weak (W). The labels strong and weak have no inherent phonetic realization, and only have meaning relative to the rest of the labels in the tree. A strong node is stronger than its weak sister node. The most prominent syllable in a phrase is the one that does not have any weak node above it. This syllable is called the Designated Terminal Element.

Hogg and Mcculy (1987) emphasized that since in metrical phonology the relationships, which are defined can only be those of stronger than or weaker than, it follows that metrical trees which are constructed must always and only be binary-branching. They added that the sister nodes must be in the relationship (WS) or (SW), since (SS) and (WW) would be meaningless. Equally, the node cannot stand on its own in either the configuration (W) or the configuration (S), since a sister node is required in order to make sense of syntagmatic concepts 'weaker than' and 'stronger than'. Below are the examples of metrical trees for the phrases *black board, John left, dew-covered lawn and coffee-table book* as illustrated by Hogg and Mcculy.

Fig. 1

Metrical grids

In a Metrical grid table, all the words in the phrase are arranged along the bottom and the rows of the grid indicate different levels of prominence.

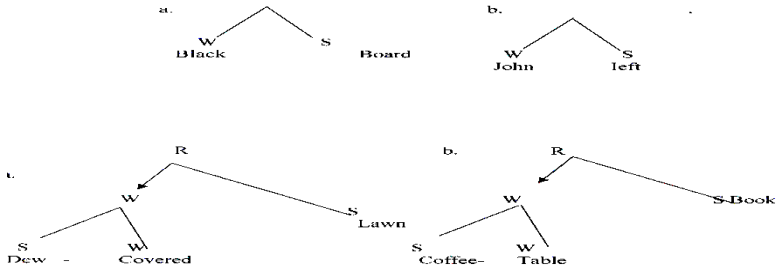
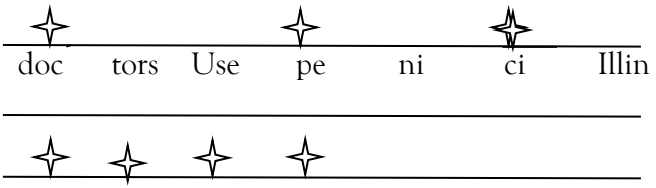


Fig. 2 Example of metrical grid



The higher the column of S above a syllable, the more prominent the syllable is. The metrical grid and the metrical tree for a particular utterance are related in such a way that the Designated Terminal Element of an S node must be more prominent than the Designated Terminal Element of its sister W node.

The structure of the metrical grid explains a number of otherwise surprising features of prominence patterns in language. For example, the main stress in English phrases may be placed several syllables away from the end of the phrase, even though the rule assigning this stress looks for lexically stressed syllables near this

boundary. Using a metrical grid, this rule can simply apply to the rightmost element in the highest row of the grid. Therefore, what seemed to be a non-local application of the phrasal stress rule is reinterpreted as the local application of the rule to the highest row of the metrical grid.

Liberman and Prince (1977) highlighted the advantages of metrical phonology. According to them, metrical phonology offers a number of advantages over a system representing stress as a feature that applies to individual segments or syllables, without reference to the other syllables in a phrase. Another advantage of this theory is that it correctly predicts the ambiguity between broad and narrow focus. There are two possible metrical patterns for two- word phrases: S-W and W-S. Finally, phonology is consistent with patterns of deaccenting in which accents can shift both left and right. This is because swapping S and W nodes will cause stress to move left if the S node was originally on the right, and move left if the S node was originally on the right, and move right if it was originally on the left. Such bi-directional movement is more difficult to predict under a stress-shift rule, which would specify the direction of movement.

Stress shifts can be used to avoid a 'stress clash'. A stress clash can occur when two stressed syllables are too close to each other. For example, the word 'nineteen' spoken in isolation has stress on the second syllable. But when it is placed before "girls" the stress on 'nineteen' can shift to the first syllable. Two syllables exhibit stress class if there are two successive rows in the grid in which their columns are adjacent (i.e. there is no x between them). For example, in fig. (7), the columns for 'teen' and 'girls' are adjacent in both the first and second rows, indicating a stress clash.

Fig. 3: example of stress clash

X		
X X		
X X X		
nine teen girls		

'nine' and 'teen' can be reversed, leading to the non-clashing as in fig. (8) as long as the reversal does not put a Designated Terminal Element of an Intonational phrase.

Fig. 4: example of stress clash

X		
X X		
X X X		
nine teen girls		

Methodology

The data, which this study is based on was drawn from the recordings of the newscasters of the Federal Radio Corporation of Nigeria FRCN and Voice of Nigeria VON using convenience and purposeful sampling technique (Ibrahim, 2002). The news items that were obtained from FRCN were those of 04th November, 2017, 07th November, 2017, and 09th November, 2017 while those of VON were obtained on 05th November, 2017, 06th November, 2017 and 10th November, 2017. The news items were obtained from the radio stations and the transcriptions and analyses of the recorded news were done by the researcher.

The newscasts were recorded, transcribed and examined looking out for stress placement in bi-syllabic, poly-syllabic and simple sentence level with the research questions in focus. The units of mistakes were measured against Standard British English phonemic notations. The phonetic notations were adopted from *Cambridge Pronouncing Dictionary* by Daniel Jones. The researcher listened to the newscasts simultaneously. Whenever the researcher suspected any wrong stress placement, the recorded tape press was paused and mistake carefully examined in order to ascertain the correctness of the stress placement. The process went on until the end of the news items. The Bayero University Kano language laboratory served as the ideal environment for the exercise. A physical count of the number of times mistakes occurred in the spoken form of the English among

newscasters was taken, based on frequency techniques in examining the data. The simple formula by Shehu (2013) was adopted:

$$\frac{NR}{TR} \text{ X } \frac{100}{1} =$$

Where:

NR = Number of respondents on the test

TR = Total number of respondents under study

The items are presented in a tabular form, each item is shown in its table showing its detail analysis.

4.1 Data presentation and Analysis

Table 1: FRCN Staff Newscasts

S/N	Date	Monosyllabic words	Bi-syllabic & polysyllabic words	Total number of the words	Total number of simple sentences
1	07 – 11 – 2017	786	511	1297	28
2	04 – 11 – 2017	633	424	1057	21
3	06 – 11 – 2017	569	479	1048	24

Table 2: VON Newscasts

S/N	Date	Monosyllabic Words	Bi-syllabic & polysyllabic words	Total number of the words	Total number of simple sentences
1	06 – 11 – 2017	468	268	736	13
2	10 – 11 – 2017	499	349	946	17
3	05 – 11 – 2017	440	321	761	16

4.2 Sample of Stress Patterns of Bi-syllabic Words of FRCN and VON: 10 words were selected and tested from each newscaster using metrical grid approach with the incorporation of English Stress Rule (ESR) and Stress Retraction Rule for the analysis. LP modified version was considered where syllable rather than segments is emphasized.

1.1 1.2

service/`**sɜːvis/ verb**			tackling/ `**tækəliŋ/verb**	
X			x	
X			x	
x x			x x	
ser vice			tac ling	

1.3 1.4

leaders /`**liːdə(s)/ noun**			refutes /**ri`fjuːt/ verb**	
X			x	
X			x	
x x			x x	
lea ders			re futes	

1.5 1.6

begins /**bi`gin/ verb**			protest /`**prəʊ,test/ verb**	
x			x	
x			x	
x x			x x	
be gins			pro test	

1.7 1.8

members /`**membə/ noun**			fast-tract /`**faːst træk/ noun**	
X			x	
X			x	
x x			x x	
mem bers			fast-tract	

Table 3: Newscasters responses on bi-syllabic words

	FRCN				VON			
Newscasters	1	2	3	Newscasters	1	2	3	
Correct	9	5	8		9	8	7	
Percentage	90%	50%	80 %		90%	80%	70%	
Wrong	1	5	2		1	2	3	
Percentage	10%	50%	20 %		10%	20%	30%	
Total number of bi syllabic word	10	10	10		10	10	10	= 60

Table 3: The result of the analysis of bi-syllabic words stress placement of the newscasters of Federal Radio Corporation of Nigeria FRCN and Voice of Nigeria VON. The result indicated that all the newscasters got more than 60% except one from FRCN who got 50%.

4.3 Sample of Stress Patterns of Polysyllabic Words of FRCN and VON. 10 words were selected and tested from each newscaster using the metrical grid approach with the incorporation of English Stress Rule (ESR) and Stress Retraction Rule for the analysis. LP modified version was considered where syllable rather than segments is emphasized.

1.9

consolidate /**kən`sɔlideit/ verb**
x
x x
x x x x
con so li date

1.10

administration/**əd,minə`streitʃən/ noun**		
x		
x x		
x x x x x		
ad mi ni stra tion		

1.11

separatist/`**seprətist/ noun**						
X						
X						
x x x						
se para tist						

1.12

harmonized/`**haːmənəiz/ verb**						
x						
x x						
x x x						
har mo nized						

1.13

development/**di`veləpment/ noun**						
x						
x						
x x x x						
de ve lop ment						

1.14

prevalnce/`**prevələns/ noun**						
x						
x						
x x x						
pre va lence						

1.15

ction/**prə`tekʃn/ noun**						
x						
x						
x x x						
pro tec tion						

1.16

allegation/**,æl,i`geiʃn/ noun**						
x						
x x						
x x x x						
al le ga tion						

1.17

coverage/`**kʌvər iʤ/ noun**						
X						
X						
x x						
cove rage						

1.18

commissioner/**,kə`miʃənə/ noun**						
x						
x x						
x x x						
com missio ner						

1.19

development /**di`veləpment/ noun**						
x						
x						
x x x x						
de ve lop ment						

1.20

economic /**,iːkə`nɔmik/ adjective**						
x						
x x						
x x x x						
e co no mic						

Table 4: Newscasters Responses on Polysyllabic Words

	FRCN				VON			
Newscasters	1	2	3	Newscasters	1	2	3	
Correct	6	8	5		4	5	7	
Percentage	60%	80%	50%		40%	50%	70%	
Wrong	24	2	5		6	5	3	
Percentage	40%	20%	50%		60%	50%	30%	
Total number of Polysyllabic words	10	10	10		10	10	10	= 60

Table 4: The result of the analysis of polysyllabic words stress placement of the newscasters of Federal Radio Corporation of Nigeria FRCN and Voice of Nigeria VON. The result indicated that all the newscasters got 50% and above except one who got only 40%. However, none of the newscasters got up to 80%.

4.4 Sample of Stress Patterns of Sentences/Phrases of FRCN and VON

1.21

budget estimate/`**bʌdʒit/ˊstimət/**
x
x x x
x x x x x
bud get es ti mate

1.22

tackling corruption/`**tækəliŋ/kə`rʌpʃn/**
x
x x x
x x x x x
tack ling cor rup tion

1.23

agric export//`**ægrik/ /`ekspɔ:t/**
x
x x
x x x x
a gric ex port

1.24

senate approves/`**senət/ /ə`pru:vs/**
x
x x
x x x x
se nate ap proves

1.25

outstanding allowances/**əʊt`stændiŋ**/ /**ə`ləunsis**/
x
x x x
x x x x
out standing al lowances

1.26

development commission/**di`veləpənt**/ /**kə`miʃən**/
x
x x x
x x x x x x x
de ve lop ment com mis sion

1.27

begins second badge/**begins**/ /**`sekənd**/ /**bætʃ**/
x
x x x
x x x x x
be gins se cond badge

1.28

gunman kills/**`gʌnmən**/ /**kils**/
x
x x
x x x
gun man kills

1. 29

to fast-track work/**tɔː**/ /**`faːst træk**/ /**wɜːk**/
x
x x
x x x x
to fast track work

1.30

investigate war crime/**in`vestigeit**/ /**wɔː**/ /**kraim**/
x
x x x
x x x x x x
in ves ti gate war crime

Table 5: Analysis of sentences/phrases stress patterns using the metrical grid approach. The table shows newscasters' stress placement on simple sentences

	FRCN				VON			
Newscasters	1	2	3	Newscasters	1	2	3	
Correct	4	2	4		4	2	1	
Percentage	80%	40%	80%		80%	40%	20%	
Wrong	1	3	1		1	3	4	
Percentage	20%	60%	20%		20%	60%	80%	
Total number of simple sentences	5	5	5		5	5	5	= 30

Table 5: The result indicated that three out of the six newscasters did not get up to 50% from the sentence stress placement while the remaining 3 got 80% correct placement.

Discussion

The findings of the study reveal that wrong placement of stress has become a real problem of concern in both Federal Radio Corporation of Nigeria (FRCN) and the Voice of Nigeria (VON). Even though both of them have shown some level of expertise in their pronunciation, some mistakes were noticeable in their stress placement especially in some polysyllabic words. Apart from all proper names and particular names of places which have their own way of pronouncing, wrong placement of stress counted in both bi-syllabic and polysyllabic words. Wrong sentences/phrases stress placement were also discovered in the findings as shown in the tables 2, 3 and 4.

The data collected on stress placement of bi-syllabic words revealed that newscasters from (FRCN) got more than 50% each except newscaster (2) who got only 50%. The other 2 newscasters that is 1 and 3 got 90% and 80% respectively. Meanwhile, the newscasters,

from (VON) got more than 60% each. The result therefore, indicates that bi-syllabic words are not major problem for the newscasters from both (FRCN) and (VON) radio stations. However, none of them got up to 100% (see table 2). The words that were wrongly stressed by FRCN and VON newscasters were:

Newsmen/‘nju:zmen/
warrant/ ‘worənt/
welfare/ ‘wel. feə/
delay/di ‘lei/
propose/prə ‘pəuz/
fifteen/ fif’ ti:n/
outcome/‘əutkʌm/

The newscasters on Federal Radio Corporation of Nigeria (FRCN) did not perform much better than the voice of Nigeria (VON) newscasters as most of them got less than 60%; only newscasters 2 and 3 got 80% and 70% respectively (see table 3). Some of the polysyllabic words that were found to be stressed wrongly by the (FRCN) newscasters are:

administration/ əd,minə‘streʃən/
misrepresentation/,mis, reprizen‘teiʃn/
association/ə, səuʃI‘eiʃn/

The VON newscasters also experienced major problems with words like:

mischievous/ ‘mistʃivəs/
invalidation/ in,væli’deiʃn/
allegedly/ ə’leʤidli/
entertainment/ ientə’teinmənt/
technology/ tek’nolədʒi/

The finding indicate that newscaster (2) from (FRCN) got only 40% which clearly shows a problem from sentences/phrases stress. In the same vein only newscaster (1) from VON got 80% correct sentences/phrases stress placement, again neither (FRCN) nor (VON) newscasters got 100% in the sentence/phrases stress placement.

In response to the research question (2) which seeks to find out whether educational attainment has any effect on the stress usage by the newscasters in the area of the study, the findings of the study indicate that although there were some disparities amongst the newscasters' qualification (Degree & HND), some stress patterns of the newscasters from FRCN and VON cut across all tribes, age ranges, gender and educational attainments. One of these is found in the newscasters' preference for the second syllable in polysyllabic words. The lack of uniformity may have resulted from a number of factors, some of them are: It was discovered that the primary and secondary stress mostly fall on the wrong syllable or all the syllables are stressed. Another factor is the effect of hypercorrection an attempt to mimic the SBE form. Despite these possible causes, there is a predominant pattern, upon which the Metrical Grid Analysis is based, and which does not seem to be peculiar to any of the newscasters.

Research Findings

1- There appears to be no significant difference between newscasters from the Federal Radio Corporation of Nigeria (FRCN) and Voice of Nigeria (VON) in the stress placement of bi-syllabic words.
2- Both the newscasters from the Federal Radio Corporation of Nigeria (FRCN) and the Voice of Nigeria (VON) have difficulties in the stress placement of polysyllabic words.
3- There is no significant evidence to show that newscasters from Federal Radio Corporation of Nigeria FRCN observe the stress shifts in their sentences and phrases usage differently from those of Voice of Nigeria VON newscasters.
4- There appears to be no relationship between the level of education and the stress placement of the newscasters of both (FRCN) and (VON).

Conclusion

The study attempted an analysis of stress using Metrical Grid in the pronunciation of selected newscasters. The newscasters were randomly selected from the Federal Radio Corporation of Nigeria

(FRCN) and the Voice of Nigeria (VON). News items from the six (6) selected newscasters were obtained from the radio stations. The news items were transcribed and examined by the researcher. The study's conclusion therefore is: In spite of the fact that Nigerian newscasters are believed to be good models for the nation, a close scrutiny of their newscasts revealed that they have weaknesses in the stress placement of bi-syllabic, polysyllabic and sentences/phrases. Even though both of them have shown some level of expertise in their pronunciation, some mistakes were noticeable in their stress placement especially in some polysyllabic words and sentences/phrases. The study indicated that sentences and phrases stress placement have become a real problem of concern for both Federal Radio Corporation of Nigeria (FRCN) and the Voice of Nigeria (VON). The major problem is their failure to observe the stress shifts. Metrical Grid can be used to handle this phenomenon. It is quite unfortunate that none of the newscasters paid attention to the stress shift even though they occurred severally in their newscasts. It is hoped that with this new approach, they will come to realize the importance of observing stress shift.

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