Multicultural Education

Volume 7, Issue 6, 2021

Acoustic Properties Of National And International Broadcasting Speech: A Contrastive Study

BalqisI.G.Al-Rashid,Candidate Hiba Jebur Hamza

Article Info

Article History

Received:
April 07, 2021

Accepted:
June 06, 2021

Keywords :
Acoustic Properties, Broadcasting Speech, Fundamental Frequency, Amplitude, Intensity,Duration Of Time

DOI:
10.5281/zenodo.4904751

Abstract

The principles that determine the processes of speech production and perception are difficult to express without referring to the use of physical concepts of wave motion, periodicity, frequency, and amplitude. These concepts can be described as the basic physical properties of speech sounds. People communicate with each other by transmitting intelligible messages. No one would like to listen to a voice that is not understood. When we listen to anational and international broadcast speech,we can sense a variation in speech production among announcers; the reason turns back to the acoustic variations in speech. The present study analyzes the acoustic properties of Arabic national and international broadcasting speech in audio media. The utterances are produced by announcer who produce newscastin four main radio stations, two of them are national radio stations in Iraq, namely (Iraqi Media Network, which includes(The Republic of Iraq radio and Al-Iraqiya Radio), and Al-Mirbad radio, the other set comprises international radio stations, namely (BBC Arabic and Monte Carlo Doualiya – MCD). The study hypothesizes that national broadcasters' acoustic properties are different from those in international broadcasting speech.The variations in the acoustic properties among broadcasters due to gender variation. Once the data are segmented, they are processed using the PRAAT acoustic analysis program (Boersma&Weenink, 2020). In this way, the researcher can measure the variations in the four acoustic parameters: fundamental frequency, amplitude, intensity, and duration of time of broadcasters' utterances.Among the main findings of this study , the three corresponding utterances are uttered by the national male/female newscasters with divers fundamental frequency , amplitude , intensity and duration , in contrast with the other international male/female newscasters.

Introduction

Acoustics is a science which deals with sound production, sound propagation from its source to the receiver, and the detection and perception of sound. Acoustic phonetics is a branch of phonetics concerned with speech sounds physical properties, as conveyed between mouth and ear. Pickett (1980,1) states that acoustics phonetics focuses on the sound patterns that function in language.

The mechanism of producing speech is that we push a stream of air out of our lungs while we are speaking. This airflow regularly varies in pressure. The variations are caused by a variety of individual vocal folds actions. The sound waves are transmitted to the listener through the air (there must be a transmitting medium – in a vacuum without it, no sound can be heard) and interpreted as speech. We as speakers of a language know that this changing pattern involves variations of various kinds: sound quality; we hear a variety of vowels and consonants, pitch or intonation of the utterance; we agree with the fact that some sounds or syllables are " louder" than others, and some sounds are longer than others.

*The present work is extracted from an M.A. thesis written by the second author and supervised by the first one.

No two people articulate the same thing similarly. Various factors, that is related to the geographical and social region of the speaker, knowledge-related statusare responsible for the pronunciation differences. Speech styles are also veriable for different speakers.There is either a fast colloquial, slowformal one.Speech provides further information on the background, attitude, and personal identity of the speaker. Acoustic terms are the most appropriate way to explain the sound. The main acoustic variations in sound are pitch, loudness, and quality (Daniel, 1967).

Modern technology and analyzing techniques can be used to identify the waveform of speech sounds. The properties of speech sounds can be specified with a high degree of accuracy. The computer program analysis of speech waves presents a visual picture that describes a sound segment that may be based on various parameters: voice fundamental frequency F_0, intensity, amplitude, the

Formant patterns (F_1, F_2, F_3 , …) ,and duration of time . It is possible by using software computer programs to measure the fundamental frequency and other patterns of frequency , the range of pitch , and voice quality of speech sounds .The present study focuses on investigating the discrimination of the acoustic properties in speech production of the national and international Arabic broadcasting speech .

2. Acoustic Properties of Sound Waves

2.1 Fundamental Frequency

The sound wave's most important property is its frequency because the perceived pitch is determined by the sound's fundamental frequency(Clark&Yallop, 2000:231). Frequency is a technical term that refers to the number of cycles . Periodic sounds have a fundamental frequency ,representing the lowest frequency of the sine waves that generate the sound . When speech sounds are produced , the fundamental frequency is based on the rate of the vibration of the vocal cords . The vocal cords produce multiple harmonics while vibrating . For example , if a sound has a fundamental frequency of 100 Hz , it has harmonics of 200 Hz , 300 Hz , etc. . These are recognized respectively as the second and third harmonics . Aperiodic sounds have neither fundamental frequency nor harmonics . It is important to show that the fundamental frequency is an acoustic property of the sound waves , and it is perceived as pitch in the auditory system . Pitch differs throughout speech . However , it corresponds to fundamental frequency , and pitch is affected directly by frequency ; equal increases or decreases in frequency do not outcome equal increases or decreases in pitch (Ball and Lowry , 2001: 63-64) . In *Acoustic Theory of Speech Production* ,Fant (1970:17) states that there is no exact equivalence between fundamental pitch and fundamental frequency . However , these two terms are often used interchangeably because of the close relation of one to one correspondence . Pitch indicates a property of a tonal perception (sensation) , while frequency is a physical property of the sound stimulus .

2.2 Amplitude and Intensity

The extent of the maximum changes in air pressure while producing a sound is known as *amplitude.* In the case of two sounds , the amplitude of one sound is larger than the other ; this suggests that the former is louder than the latter (Ladefoged, 1996: 16)

Trask (1996:21) defines amplitude as a property of a sound wave that is closely related to its intensity and hence to the perceived loudness . Loudness is the perceptual phenomenon that correlateswith the acoustic intensity of a sound (Trask, 1996 : 211).

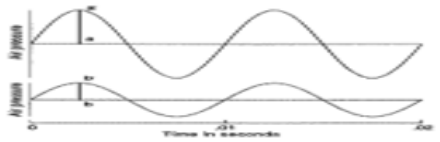


Fig.1 Two sounds , one with double the amplitude of the other (adopted from Ladefoged , 1996:16) .

Moreover , the amplitude of a sound wave refers to the degree of the movement or displacement of air particles within the wave . The greater the wave's amplitude, the greater intensity of the sound and the louder the sound that is perceived(Birjandi&Nodoushan , 2005:157 , Crystal , 2008: 23) . Ladefoged(2012: 23) notes that in the case of pushing more air out of the lungs this causes the amplitude of the vibration of the vocal cords to become larger and hence louder ; that is to say it raises the pitch.

2.3 Resonance

As each sound has its own frequency and intensity , also it has its own quality . The differences in sounds are caused , among other things, by the resonant properties of their sources . The resonant attributes of any given speech sound are based on a number of factors : the size and the shape of the sound source , and the size and the shape of the chamber into which the sound is directed (Ball and Rahilly, 1999: 160) . In speech the resonances of the vocal tracts are called formants ; the basic formant frequency of the adult male is 500 Hz (Pickett, 1980: 24). Resonance refers to the natural tendency of an object to vibrate at a certain frequency . The source of sound has a natural resonating frequency , that depends on its mass , length and tension . The vocal folds as the source of sounds vibrate so as to produce a glottal wave . Changing the shape of the vocal tract (i.e. , the resonating champer) varies the frequencies of the formants . Formants are essential in characterizing different sounds (Rogers, 1991: 133-134 , 2013: 143) , with the modification of the vocal tracts' shape different frequencies for different sounds occur (Ball and Lowry, 2001:65)

3. The Acoustic Model of Speech Prduction

The most important philosophy of acoustic theory of voice production is that speech consists of a source function and a vocal tract filtering process, i.e. , a raw material and a sound shaping . The vocal cords are responsible for filtering and shaping voice and then transfering a large part of information in speech , they get more attention than the source function (Fant , 1981: 21).

The speech wave comes as a response of the vocal tract filter system to a sound source . In *Acoustic Theory of Speech Production* ,Fant (1970 : 16-17) clarifies an analogous situation which relates between the phonetic term phonation and the technical term source , and likewise between articulation and filter . In speech production , the source is an acoustic disturbance of the airflow that leads to build up the air stream , and then it results in a friction or a transient release of the airstream . In the case of voiced sounds , there is a modulation of the air stream because of the aerodynamic stage of the opening and closing movement of the vocal cords . Periodicity is considered as the basic property of a vocal cord sound source by the duration (T_0) of a complete voice period or by the inverse value of the voice fundamental frequency .

Fant (1981: 22) states that the acoustics of voice production includes two related elements ,*aerodynamics* and *sound* . The aerodynamics describes airflow pressure in the respiratory pathways correlate with supplying power , whereas the sound comes from the fluctuations of airflow and pressure distributions . The source is defined from an acoustic analysis point of view as the air flow's oscillation passing through the time – varying glottis opening between the vocal cords . A sound wave is produced due to the filtering process , which is correlated with the intermediate stage of airflow passing through the lips of a speaker with many variations .

4. Broadcasting Speech

The primary resource for our communication is via voice, but it is considered a crucial weapon for a broadcaster who works in the audio or audiovisual media . Voice on the radio or television conveys not only the specific content of the text , but also all the

meanings and the affective dimensions . Consequently , the listeners' attention to the audiovisual message and its comprehension and assimilation rely on the accurate and expressive use of the voice . In the broadcasting speech , the audiences' perception depend on the particular presentation of the broadcaster.

People who work in the broadcasting industry try to develop their voice for audiovisual media that they look professional in front of a microphone. Voice is considered the most important physical quality for effective broadcast performance because it is the only means for an announcer to communicate with the audience. Developing the vocal quality, requires understanding , training , and practice . As ordinary people do not pay much attention to vocal quality development because we practice speaking every day , but once we employ our voice in the broadcasting field , it requires vocal enhancement to send a message . Actually, radio broadcast media depends on the human voice to connect with the audience. The broadcasters' voices can be described as an identity that represents their personality . Mcleish(2005: 115) indicates that the presenter at the microphone should be fully aware of and quite careful that the listener can understand what he or she is saying . The primary role of the broadcaster is to create a relationship with the audience that holds them to the station .This means that the most important tool of a presenter is her/his voice . The delivered message comprises entertainment programs ,news , sport , social programs , and many other types of entertainment programs. Announcers who work in this field need to have certain qualities which distinguish them from others , such qualities include excellent communication skills . Announcers should be able to communicate effectively (Eldson , 2014) .

Broadcasters who are professionals in this field have to follow two main aspects of voice production: diaphragmatic breathing and articulation . Diaphragmatic breathing is a deep breathing , which utilizes a diaphragm contraction with a chest's minimal movement. This type of breathing increases coordination with phonation and decreases the tension of the vocal folds . For the radio and audiovisual announcers , the articulation of sounds must be precise , because listeners need to instantly perceive the whole message . Therefore , in their training period , broadcasters have a series of articulation exercises to enhance their organs which are involved in producing sounds , such as (tongue , jaw , cheeks , and soft palate) (Rodero et al , 2017, 3) .Rodero(2013 : 227-228) clarifies that the use of voice is based on the combination of three acoustic characteristics : intensity , pitch and timber . First , intensity which is the energy of the voice , is based on the air pressure exerted on the vocal folds ; this power of this pressure causes the vibration of the vocal folds . Actually, broadcasters' voice quality is not very decisive on the radio since they work with a microphone that amplifies the sound . Broadcasters' voice intensity must be strong enough to transfer security ; therefore , it should be neither too high nor too low . Pitch plays a crucial role in the use of voice . Accordingly sounds can be classified and marked on a pitch scale . The pitch of the voice on radio must be low , because most people prefer this kind of voice , it reflects a sense of trust and confidence . Timber is the color of the voice that makes it possible for others to identify a person by listening to her/his voice . The most valued voices are those which have resonance , brightness , and clarity , with regard to the properties of the voice . Audience prefers low-pitched voices , resonant timbers , and clear and strong intensities .Voice quality is a complex property which can be defined as the final sound that comes from the combination of the acoustic properties (loudness , duration and pitch) modelled by the resonant organs . The main problems with voice quality that may face broadcasters in the media are concerned with articulation and resonance . As a consequence for this , nonprofessional speakers articulate with little resonance because they do not open their mouths enough (Rodero, et al , 2017: 3) .

5. Gender Variationin Speech Production

Listeners regularly realize both the gender and individual identity of the speakers from their speech. Because of genser dimorphism, the combination of the fundamental frequency (shows larynx size) and vocal folds length cues (represent body size) is expected to have the best acoustic associations of talker gender. Phoneticians such as (Ladefoged and Broadbent, 1957; Ladefoged, 1967, Ambercrombie, 1967) suggest that utterances regularly consist of acoustic information representing the speaker's characteristics, in addition to their linguistic content. These indexical parameters are studied to perceive the nature of the information they convey(Bachorowski and Owren, 1999: 1054).

The acoustic theory of speech production postulates that the acoustic properties of speech sounds represent the sound source's integrated effects and the filter through which it is passed. The first combination of speech properties is related to the phonation process (the vibration of the vocal folds) in the production of speech sounds. Women seem to have smaller and thinner vocal folds that vibrate faster than men's (Titze, 1989; as cited in Munson and Babel, 2019: 502). Listeners perceive the increased rate of vibration and higher fundamental frequency, as a higher pitch. The source spectrum that is produced at the glottis reflects a complex signal because it is composed of the fundamental frequency and harmonics, with harmonics like many fundamental components, that means to say men have harmonically heavier voices than women (Munson and Babel, 2019: 502). A particular case for female speakers is that there is an incomplete closure of the vocal folds during the phonation process. There is regularly some opening at the glottis through a phonatory cycle. This opening occurs at the arytenoid cartilages at the posterior end of the folds, and it is indicated as ' glottal ' or ' posterior chinks' . Other types of opening occur at the anterior end of the folds or the medium of the folds. In general , an opening at the glottis can be described as ' a glottal gap ', or ' a fixed opening '(Hanson, 1995: 7)

Gender variation in the mass of the vocal folds causes a phenomenon which is known as voice quality variation among male and female speakers . Voice quality is a sophisticated phenomenon consisting of a set of voicing sounds source modification , extending from laryngealized to normal to breathy phonation . The potential acoustic cues of voice quality variations include : open quotient increases due to the relative increase of the fundamental frequency , the arytenoids become more separated because of the increase of

the amount of aspiration (Klatt and Klatt , 1990 : 820) . The open quotient is a crucial parameter to understand the variations of voice quality. It reflects the glottis amount is unblocked during the opening and closing of the vocal folds throughout the phonation process . Modal voicing happens when the open quotient is 0.5. That is to say , there is approximately equality of the open-closed phases of the vibrating cycle . Breathy voice results from higher open quotient values that mark the glottis as more opened than it is closed. In contrast, the creaky voice quality is produced due to the lower open quotient values that indicate the glottis is more closed than opened .Titz, (1989)Klatt and Klatt(1990), as cited in Munson and Babel, (2019: 504) state that breathy voice qualities affiliate to women's voices, that is because the women's thinner vocal folds are less likely to make full closure during phonation, resulting in generating a breathy voice quality.

The source spectrum which is produced at the glottis for voiced sounds is filtered by the vocal folds. This process involves the harmonic frequencies which fall at or near the resonant peaks of the vocal folds . These resonant peaks can be specified by the size and shape of the vocal folds. The acoustic differences suggest significant variations between male and female vocal folds. Males are expected to have longer vocal folds in comparison to women, as well as longer pharyngeal cavities (Fitch and Giedd, 1990: 1511)

6. Acoustic Analysis of Data

6.1 Procedures and Stimuli

To obtain a contrastive study , the researcher should prepare two groups of the database for the acoustic analysis. The data are the speech in Modern Standard Arabic Language related to national and international broadcasting speech. The data of the study must be different in topics , for example (newscast , sport and social) and to be presented by different gender (male / female). To investigate the acoustic properties of the speech , the researcher has to follow some procedures :

1. The researcher has to collect the data of the study (broadcasting speech) from four main radio stations , two of them are national radio stations in Iraq ,namely (Iraqi Media Network which involves: The Republic of Iraq Radio and Al-Iraqia Radio) , and Al-Mirbad Radio . The other set comprises international radio stations , namely (BBC Arabic and MonteCarloDoualiya- MCD) . Furthermore, the researchermakes a transcription for the announcers' utterances by adopting Arabic phonemic symbols from (Gordon E. Peterson , and June E. Shoup , (1966) A Physiological Theory of Speech phonetics , as cited with modification in Al-Ani (1970), Arabic Phonology.
2. The researcher should break down the data into utterances by using the software computer program (SOUND FORGE Pro suit) (version 14.0 , 2020). Due to the spokesperson's gender , half of the data involves female announcer's speech , and the other half involves male broadcasters for both the national and international groups.
3. The researcher must acoustically analysethe utterances by using the Praat program (Boersma and Weenink,2020) to obtain the acoustic properties of announcers' speech : Fundamental frequency , intensity ,amplitude and duration of time.
4. To make the analysis more understandable for the reader, the researcher suggests the symbolic system that each announcer is given a number followed by two letters and a final number. The first number refers to the radio station's name (e.g., 1 The Iraqi Media Network, 2 Al-Mirbad Radio, 3BBC Arabic radio ,and 4MCD radio). The first letter (e.g., N or I) defines whether the announcer is national or international; the second letter (M or F) represents the gender of the announcer ; and at the end of each symbol there is a number (1,2,3) which indicates the number of utterances that the announcers present.

6.2 The Acoustic Analysis of the Newscast Utterances

6.2.1 The Range of Fundamental Frequency(F0)

The mean fundamental frequency (F0) values are measured for the utterances of each broadcaster. The fundamental frequency is calculated for three corresponding utterances that national and international newscasts' announcers produce; the utterances are a greeting phrase /ʔahlanbikum/ (Welcome)أهلاً بِكُم ,news bulletin editorial /ʔabrazulƐʌnaawiin/(The most prominent titles) أبرزُل عَناوين and a piece of global news which is broadcasted by all newscasts' announcers national and international which is /sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa/ (A new strain of Corona Virus) سُلالةً جديده مِنْ فايروسِ كورونا. The results show that the mean fundamental frequency produced by a national male newscast's announcer in the first utterances is (1NM1= 443Hz). The second utterance has a fundamental frequency of (1NM2= 434Hz), while the third utterance has a fundamental frequency of (1NM3= 670.9Hz). The analysis of the second national station shows that the mean fundamental frequency that is produced by a male newscast's announcer in the first utterance is (2NM1=730.2 Hz), the second utterance has a fundamental frequency of (2NM2=848.6 Hz),whereas the third utterance has F0 of (2NM3=670.9 Hz). In contrast, we have the mean fundamental frequency that is presented by an international male newscast announcer in the first international radio station. The results reveal that the mean fundamental frequency that is produced by an international male newscast's announcer in the three utterances is : (3IM1= 749.4 Hz), (3IM2= 907.9 Hz), and (3IM3=493.2 Hz), respectively. The mean fundamental frequency of the male newscast's announcer in the three utterances are : (4IM1= 670.9 Hz), (4IM2=730.2 Hz), and (4IM3=552.4 Hz) as is shown in the table below.

Table (1) The Mean Fundamental frequency (F0) of the national and international male newscasts' announcers

F0 Reading (Hz)		
1NM1	***1NM2***	***1NM3***
443	***434***	***670.9***
2NM1	***2NM2***	***2NM3***
730.2	***848.6***	***670.9***
3IM1	***3IM2***	***3IM3***
789.4	***907.9***	***493.2***
4IM1	***4IM2***	***4IM3***
670.9	***730.2***	***552.4***

The figures below clarify the mean fundamental frequency of both the national and international male newscast announcers' utterances .

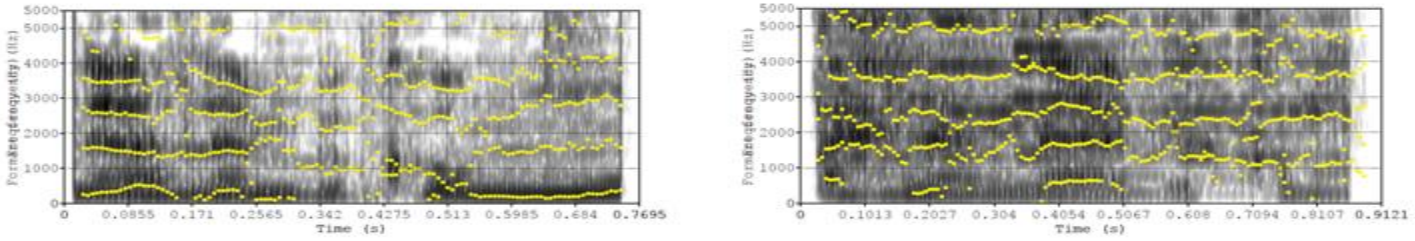


Fig.(2) The mean fundamental frequency of (1NM1 / 2NM2) /ʔahlan bikum/ utterance

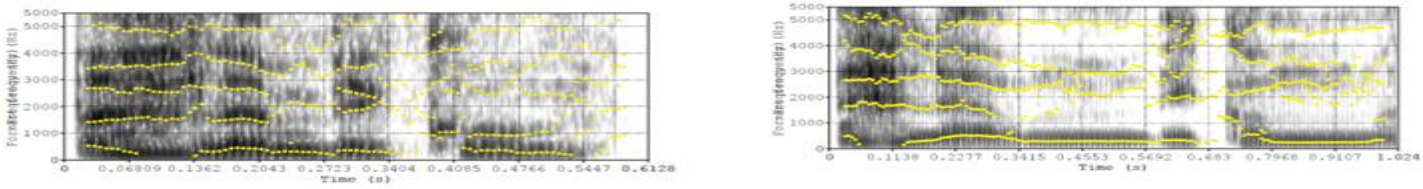


Fig.(3) The mean fundamental frequency of (3IM1/4IM1) /ʔahlan bikum/ utterance

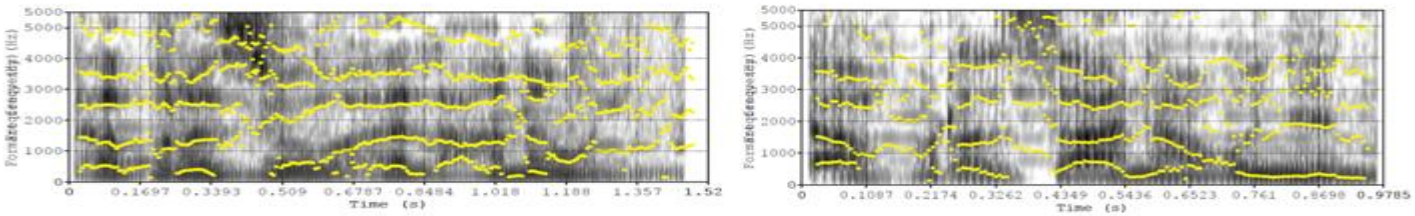


Fig.(4) The mean fundamental frequency of (1NM2/2NM2) /ʔabrazul ɛʌnaawiin /utterance

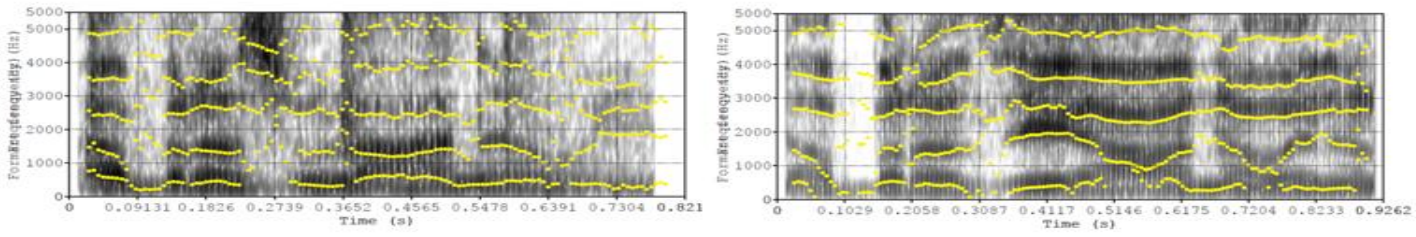


Fig.(5) The mean fundamental frequency of (3IM2/3IM2) /ʔabrazul ɛʌnaawiin /utterance

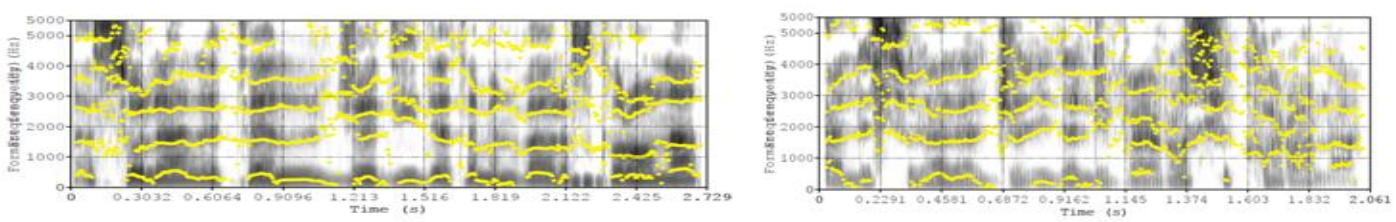
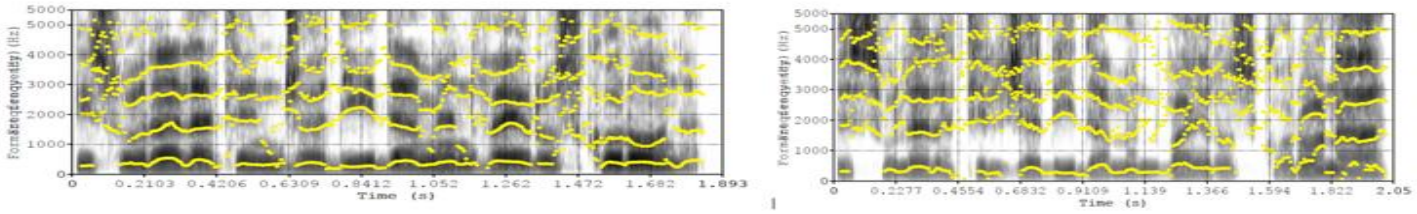


Fig.(6)The mean fundamental frequency of(1NM3/2NM3)/sulaalatan ʒadiidə min vɑyrɔ:s kɔ:rɔ:naa /utterance.



Fig(7)The mean fundamental frequency of (3IM3/ 4IN3) / sulaalatan ʒadiidə min vɑyrɔ:s kɔ:rɔ:naa /utterance.

The results of the analysis display that the average of the fundamental frequency reading value associated with the national females' newscast announcers in producing the same three utterances are found to be (1NF1=730.2 Hz), (1NF2=611.7Hz) and (1NF3=493.2 Hz) in this order. The analysis of the other national radio station manifest the fundamental frequency is found to be (2NF1=804.2Hz), (2NF2=347.7Hz), and (2NF3=611.7Hz) , respectively. On the other hand, the results exhibit that the fundamental frequency reading values of the international female newscast announcers in producing the corresponding utterances, which are "greeting phrase, "news bulletin editorial", and "an international chosen news," are as follow: the fundamental frequency in the case of the first international radio station is found to be (3IF1=789.4Hz), (3IF2=552.4 Hz), and (3IF3=552.4Hz). Moreover,the fundamental frequency in the case of the other international radio station is found to be (4IF1= 768.3 Hz), (4IF2=552.4Hz) and (4IF3=434Hz) in this order .These results are summarized in the table below, and the figures below show the spectrograms of both the national and international females' utterances.

Table(2) The mean fundamental frequency (F0) of the national and international females' newscast utterances

F0 Reading (Hz)		
1NF1	***1NF2***	***1NF3***
730.2	***611.7***	***493.2***
2NF1	***2NF2***	***2NF3***
804.2	***374.7***	***611.7***
3IF1	***3IF2***	***3IF3***
789.4	***552.4***	***552.4***
4IF1	***4IF2***	***4IF3***
768.3	***552.4***	***434***

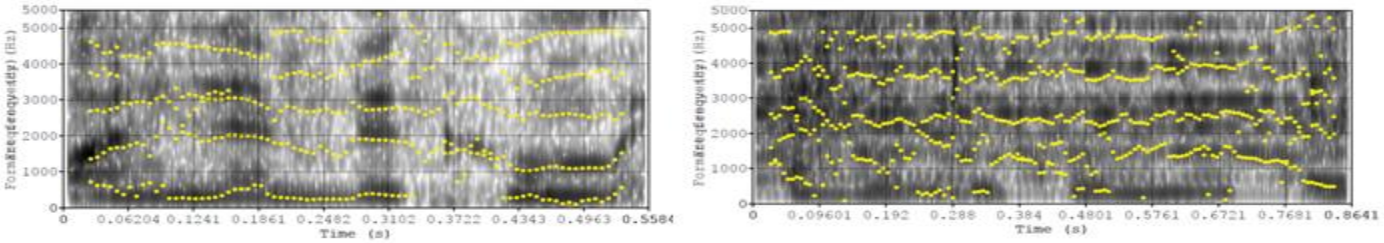


Fig.(8) The mean fundamental frequency of (1NF1/2NF1) /ʔahlan bikum / utterance

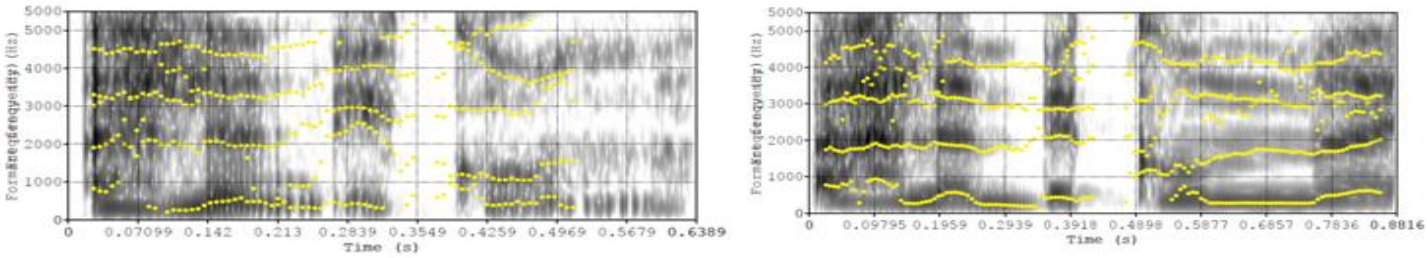


Fig.(9) The mean fundamental frequency of (3IF1/4IF1) /ʔahlan bikum / utterance

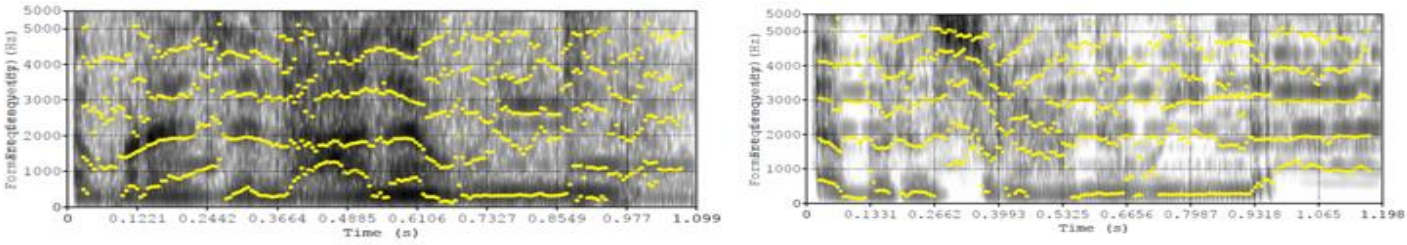


Fig.(10) The mean fundamental frequency of(1NF2/2NF2) /ʔabrazul ɛʌnaawiin /utterance.

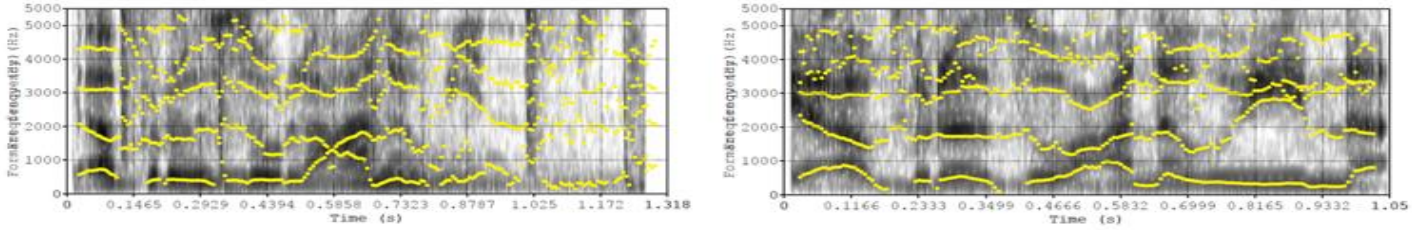


Fig.(11) The mean fundamental frequency of (3IF2/4IF2) /ʔabrazul ɛʌnaawiin /utterance.

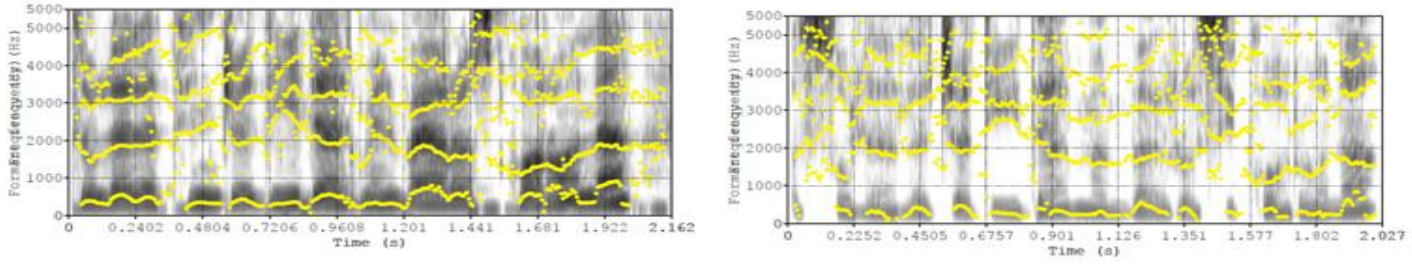


Fig.(12)The mean fundamental frequency of(1NF3/2NF3)/sulaalatan ʒadiidə min vɑyrɔːs kɔːrɔːnaa /utterance

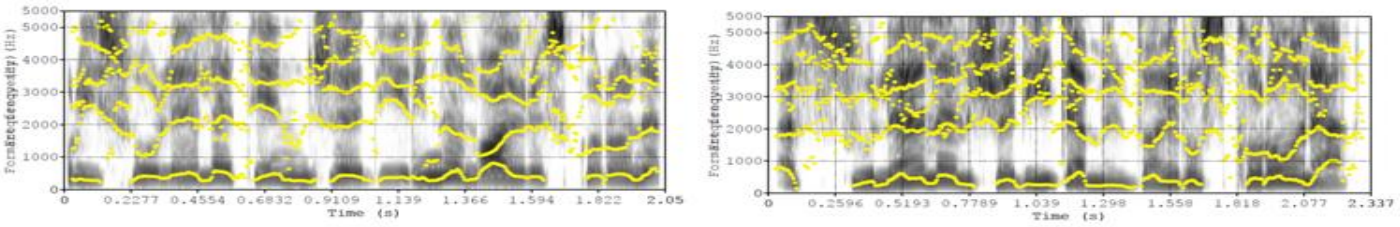


Fig.(13) The mean fundamental frequency of(3IF3/4IF3) /sulaalatan ʒadiidə min vɑyrɔ:s kɔ:rɔ:naa /utterance.

The mean fundamental frequency varies considerably; the announcer's voice is based on the number of times per second that the vocal folds vibrate. If they vibrate many times per second, the tension increases, causing a higher pitch. Theanalysis confirms that there are variations in the utterances' fundamental frequency as produced by the national and international announcers .The sequence of the readings of the fundamental frequency of newscast announcers who produce the first utterance "Greeting phrase," /ʔahlanbikum / is as follows: BBC male announcer=789.4Hz, Al-Mirbad male announcer = 730.2 Hz, MCD male announcer = 670.9, and Baghdad male announcer =443 Hz>. The same utterance's fundamental frequency, which is produced by females announcers for both national and international radio stations, is found to be as follows: < Al-Mirbad =804.2 Hz, BBC=789.4 Hz, MCD=768.3 Hz, and Baghdad radio=730.2Hz>. It is known that males have a lower fundamental frequency than females(see, Ducote, 1983:1). The difference in the range of fundamental frequency among announcers shows their orientation to attract the listeners' attention.

The fundamental frequency values of the second utterance /ʔabrazulƐʌnaawiin / as produced by both the national and international male newscast announcers are BBC=907.9Hz, Al-Mirbad =848.6Hz, MCD=730.2Hz, and Baghdad=434 Hz. On the other hand, the production of the same utterance's is uttered with a similar fundamental frequency by the international female newscast announcers of the BBC and MCD= 552.4 Hz . In contrast to the national female newscasters who uttered it with a different fundamental frequency , as follows: Baghdad =611.7 and Al-Mirbad=374.7Hz , the announcers attempted to adjust their voices so as to come over the music at the background. In such a noisy environment , speech exhibits an increase in the fundamental frequency in order to become more comprehensible .

The fundamental frequency values of the third utterance / sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa /as produced by both the national and international male broadcasters are as follows: Al-Mirbad male announcer = 670.9Hz, BBC male announcer =552.4 Hz, MCD male announcer =552.4Hz, and Baghdad male announcer = 492.2Hz. In speech production, whether it is live or recorded, the intended message should be clearly presented so as to be correctly understood. Announcers seem to make a lot of modifications to deliver the message to suit the situation's needs. The announcer's adjustment of their speech describes their style in moderating the acoustic variations to produce an intelligible message. Here, precisely, in this utterance, announcers modify their output speech in accordance with the related context. The observed variation in the fundamental frequency among the announcers aims to deliver an intelligible utterance. Female announcers produced the same utterance for both the national and international radio stations with the following fundamental frequency values : Al-Mirbad female announcer= 611.7Hz , BBC female announcer= 552.4 , Baghdad female announcer=493.2Hz ,and MCD female announcer = 434Hz . Because women have a higher fundamental frequency than men, female announcers have to use a modulated voice pitch that is neither high nor low. This kind of voice pitch reflects a sense of seriousness, trust, and confidence.

6.2.2 Amplitude

Vocal amplitude refers to the loudness or softness of an individual's voice. The results of the analysis reveal that the mean amplitude reading values of the male national and international newscast announcers in producing the first utterance /ʔahlanbikum / is found to be (1NM1= minimum> -0.3288 , maximum > 0.2387 , mean > 0.1141 , the total energy in air > 2.5079 J/m^2) , (2NM1= minimum > -0.9465 , maximum> 0.8228 , mean > 0.22561 , the total energy in air> 0.00011J/m^2) , (3IM1= minimum> -0.1574 , maximum> 0.2239 , mean> 0.0503 , total energy in air > 3.888J/m^2) , (4IM1= minimum> -0.6299 , maximum> 0.6665, mean > 0.1684, total energy in air> 7.2633J/m^2) .The mean amplitude reading values of the second utterance /ʔabrazulƐʌnaawiin / which is produced by national and international male announcers are as follows: (1NM2= minimum> -0.3572 , maximum> 0.2869,mean> 0.0893 , total energy in air > 3.0472 J/m^2) (2NM2= minimum> -0.2226 , maximum> 0.3898 , mean> 0.0718 , total energy in air> 0.3898 , mean> 0.0718 , total energy in air> 1.2620J/m^2) , (3IM2 = minimum> -04283 , maximum> 0.5259, mean> 0.1090 , total energy in air > 2.4423J/m^2), (4IM2= minimum> -0.6607 , maximum> 0.6324 , mean> 0.1609 , total energy in air > 5.9950J/m^2) . The third utterance which is presented by the national and international male announcers /sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa/ has the mean amplitude (1NM3=minimum> -0.04218 , maximum> 0.2995 , mean> 0.09030 , total energy in air> 5.5636J/m^2) , (2NM3= minimum> -0.8167 , maximum> 0.7236 , mean> 0.1734 , total energy in air> 0.0607J/m^2) ,(3IM3= minimum> -0.3048 , maximum> 0.4494 , mean> 0.0883 , total energy> 3.6967) , (4IM3= minimum > -0.6453 , maximum> 0.6556 , mean> 0.1546 , total energy in air> 0.000122J/m^2) ,respectively for more clarification see table (3) below:

Table (3)The mean amplitude of the national and international male newscast announcers

Reading Value	Minimum amplitude		Maximum amplitude	Mean amplitude	The total energy in the air(J/m^2)
1NM1	-0.3288		0.2387	0.1141	2.5079
1NM2	-0.3572		0.2869	0.0893	3.0472

	1NM3	-0.4218	0.2995	0.09030	5.5636
	2NM1	-0.9465	0.8228	0.22561	0.00011
	2NM2	-0.2226	0.3898	0.0718	1.2620
	2NM3	-0.8167	0.7236	0.1734	0.0607
	3IM1	-0.1574	0.2239	0.0503	3.888
	3IM2	-0.4283	0.5259	0.1090	2.4423
	3IM3	-0.3048	0.4494	0.0883	3.6967
	4IM1	-0.6299	0.6665	0.1684	7.2633
	4IM2	-0.6607	0.6324	0.1609	5.9950
	4IM3	-0.6453	0.6556	0.1546	0.000122

Speakers usually modify their voices, and that is based on the physical context or environment's conditions, that is to say, whether they are speaking in a noisy or a quiet environment. In a broadcast performance, announcers should control their speech by using the microphone and the audio console, to amplify the sound. The corpus analysis results illustrate the variation of amplitude reading values of both groups of male national and international newscast announcers. It can be seen that the mean amplitude of the announcers' news reading varies. Itis as follows: (2NM1=0.22561, 4IM1=0.1684, INM1=0.1141, 3IM1=0.0503). The mean amplitude values of both (Al-Mirbad male newscaster and MCD newscaster) are higher than the other two newscasters (Baghdad radio and BBC newscasters). The figures below clarify the variations of the amplitude parameter among national and international announcers in producing the first utterance, /ʔahlanbikum /

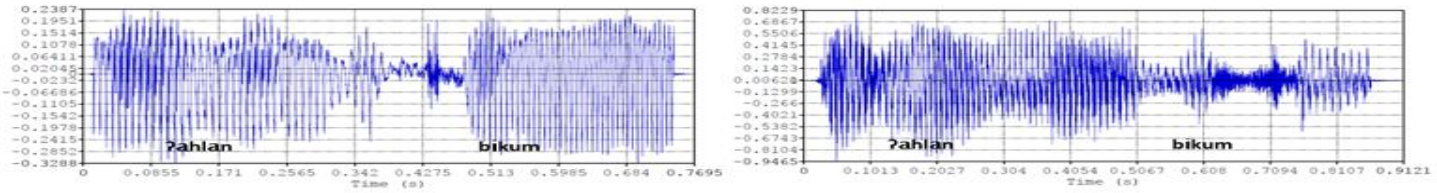


Fig.(14) The mean amplitude of the national male newscasters' waveforms (1NM1/2NM1)

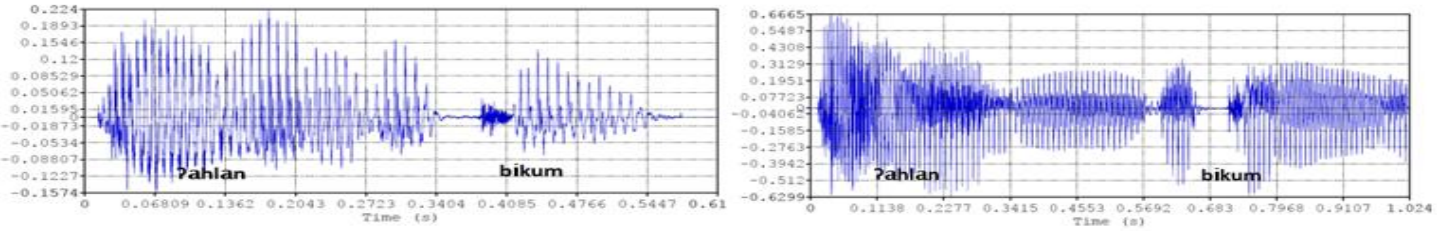


Fig.(15) The mean amplitude of the international male newscasters' waveforms (3IM1/4IM1)

The results of the analysis show the variation of the mean amplitude in producing the second utterance /ʔabrazulƐʌnaawiin / .Both groups of national and international newscasters produced this utterance, and the sequence of the amplitude values is as follows: (4IM2=0.609, 3IM2=0.1090, 1NM2=0.0893, 2NM2 0.0718). Precisely, in this utterance, announcers have to utilize a higher amplitude than in another context because of the music background. The results reveal that international newscasters use a higher amplitude than national newscasters. The figures below manifest the variation in the mean amplitude among national and international male newscasters in producing the second utterance /ʔabrazulƐʌnaawiin/

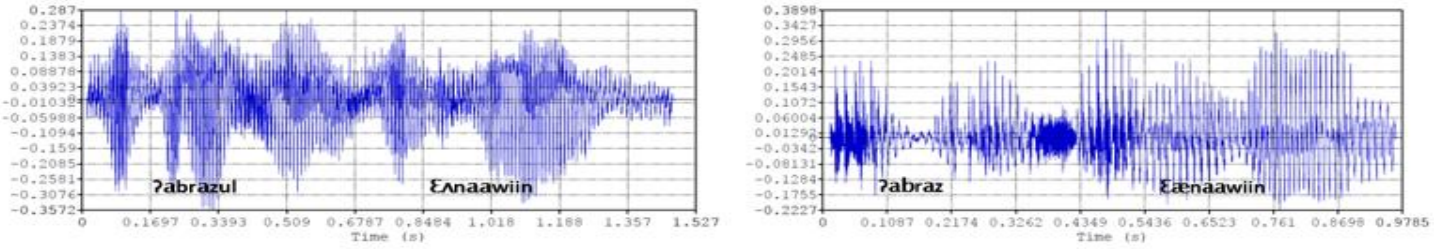


Fig.(16) The mean amplitude of the national male newscasters' waveforms (1NM2/2NM2)

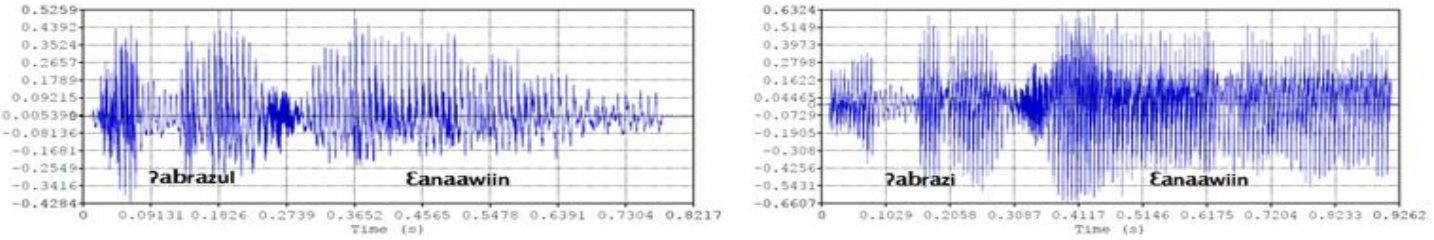


Fig.(17) The mean amplitude of the international male newscasters' waveforms (3IM2/4IM2)

The different mean amplitude values of the third utterance / sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa / which is produced by the national and international male newscasters are as follows: (2NM3=0.1734, 4IM3=0.1546, 1NM3=0.9030, 3IM3=0.0883). The results indicate that (2NM and 4IM) newscast announcers produce a higher amplitude mean than the other announcers, and the (1NM) announcer produces this utterance with a higher amplitude than the (3IM) announcer. That is to say, the greater amplitude refers to greater intensity, and it indicates a high fundamental frequency. Thus, this utterance requires a modulating range that is neither too high nor too low due to its void of other influential sounds such as music, see the figures below.

The results of the same utterances analysis also confirm a significant contrast in reading amplitude values of the national and international female newscasters , as it is shown in table (4) . The average amplitude reading values of the national and international

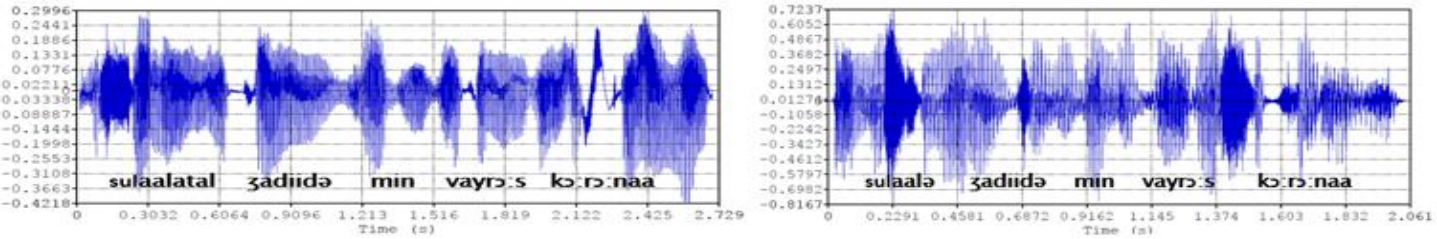


Fig.(18) The mean amplitude of the national male newscasters' waveforms (1NM3/2NM3)

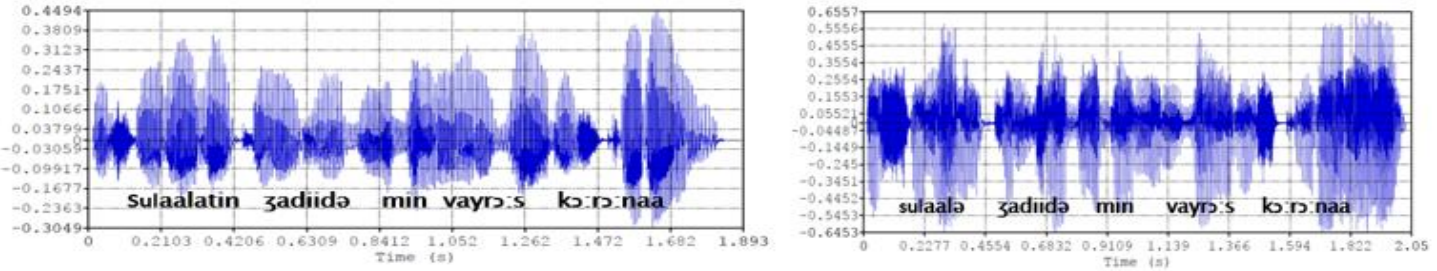


Fig.(19) The mean amplitude of the international male newscasters' waveforms (3IM3/4IM3)

female newscasters in producing the first utterance / ʔahlanbikum/ are found to be (1NF1= minimum> -0.1802 , maximum> 0.1634 , mean> o.533 , total energy in air> 3.9800J/m^2) , (2NF1= minimum> -0.2417 , maximum> 0.2794 , mean> 0.05732 , total energy in air>7.1520 J/m^2) , (3IF1= minimum > -0.3256 , maximum> 0.3540 , mean>0.04522 , total energy in air> 3.2681) , (4IF1= minimum> -0.6902 , maximum> 0.6642 , mean> 0.2105 , total energyin air> 9.7694 J/m^2) . The mean amplitude readingsof the second utterance /ʔabrazulƐʌnaawiin / that is produced by both groups of female newscasters are as follows: (1NF2=minimum> -02444 , maximum> 0.1730 , mean> 0.0484 , total energy in air> 6.4483 J/m^2) , (2NF2= minimum> -1.0333 , maximum> 1.0132 , mean>0.2197 , total energy in air> 0.00014J/m^2), (3IF2= minimum>-0.3490 , minimum> 0.3025 , mean> 0.0718, total energy in air> 1.7018J/m^2) , (4IF2= minimum> -0.5649 , maximum> 0.6002 , mean> 0.1634 , total energy in air> 7.0045 J/m^2) . The average amplitude reading values of the third utterance /sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa/ , that is produced by the national and international female newscasters is read to be (1NF3=minimum> -0.1511 , maximum> 0.1226, mean> 0.0362 , total energy in air > 7.1206 J/m^2) , (2NF3= minimum> -0.3862 , maximum> 0.4111 , mean> 0.0760, total energy in air> 2.9293J/m^2) , (3IF3=minimum> -0.2540 , maximum> 0.2610 , Mean> 0.0556 , total energy in air> 1.5867J/m^2) , (4IF3= minimum> -0.5553 , maximum> 0.6299 , mean 0.1911, 0.00021J/m^2) , as displayed in the table below.

Table (4)The mean amplitude of the national and international female newscasters

Amplitude Reading Value (Pascal)	Minimum amplitude		Maximum amplitude	Mean amplitude	The total energy in the air(J/m^2)
	1NF1	-0.1802	0.1634	0.533	3.9800
	1NF2	-0.2444	0.1730	0.0484	6.4483
	1NF3	-0.1511	0.1226	0.0362	7.1206
	2NF1	-0.2417	0.2794	0.05732	7.1520
	2NF2	-1.0333	1.0132	0.2197	0.00014
	2NF3	-0.3862	0.4111	0.0760	2.9293
	3IF1	-0.3256	0.3540	0.04522	3.2681
	3IF2	-0.3490	0.3025	0.0718	1.7018
	3IF3	-0.2540	0.2610	0.0556	1.5867
	4IF1	-0.6902	0.6642	0.2105	9.7694
	4IF2	-0.5649	0.6002	0.1634	7.0045
	4IF3	-0.5553	0.6299	0.1911	0.00021

The results of the analysis show that the national female newscaster(INF1=0.533) produced a greater amplitude than the other national female newscaster(2NF) and the international female newscasters (3IF / 4IF) in the case of the first utterance /ʔahlanbikum / , (2NF1=0.05732 , 3IF1=0.04522 , 4IF1=0.2105), respectively.The figures below exhibit the mean amplitude of both groups of female newscasters.

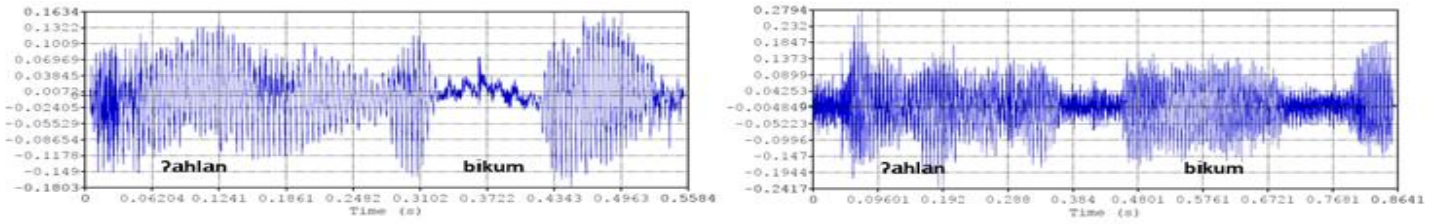


Fig.(20) The mean amplitude of the national female newscasters' waveforms (1NF1/2NF1)

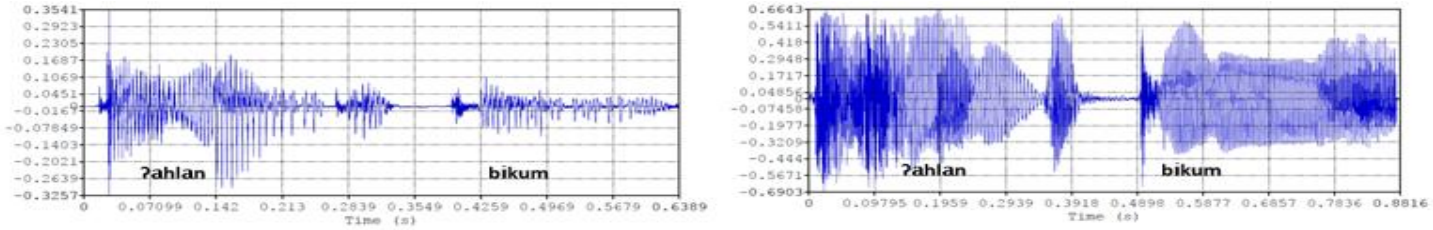


Fig.(21) The mean amplitude of the international female newscasters' waveforms (3IF1/4IF1)

The second utterance /ʔabrazulƐʌnaawiin / is produced with a higher amplitude by the national female announcer (2NF2= 0.2197), and the international female newscaster(4IF2= 0.1634), than the other female announcers. Amplitude measurement varies in producing this utterance due to the noisy context in which announcers produce speech; that required them to raise the mean amplitude to a higher level so as to attract the audience's attention. The figures below show the mean amplitude values of the national and international female newscasters.

The third utterance / sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa/ , is produced by the international female newscaster(4IF3=0.1911) with a higher amplitude than the national female newscaster(2NF3= 0.0760), then comes next the international female newscaster(3IF3=0.0556),and followed by the national female newscaster(1NF3=0.0362), respectively . The figures below exhibit the mean

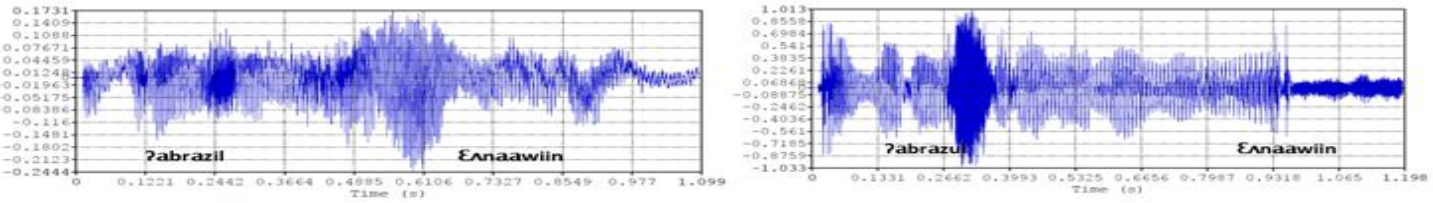


Fig.(22) The mean amplitude of the national female newscasters' waveforms (1NF2/2NF2)

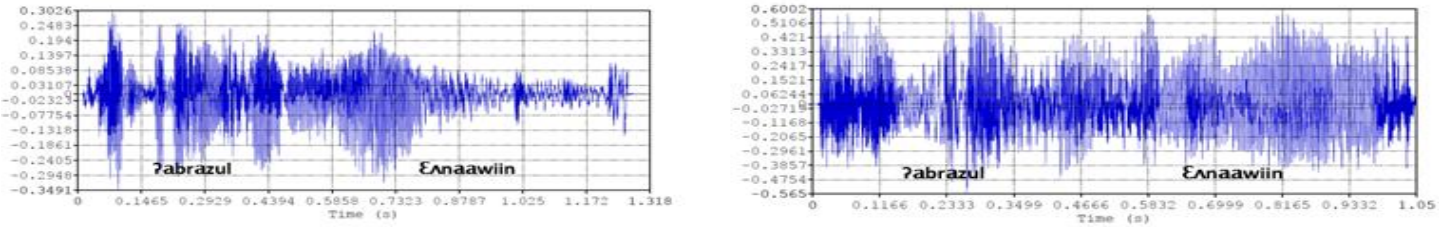


Fig.(23) The mean amplitude of the international female newscasters' waveforms (3IF2/4IF2)

amplitude of both groups of female newscasters

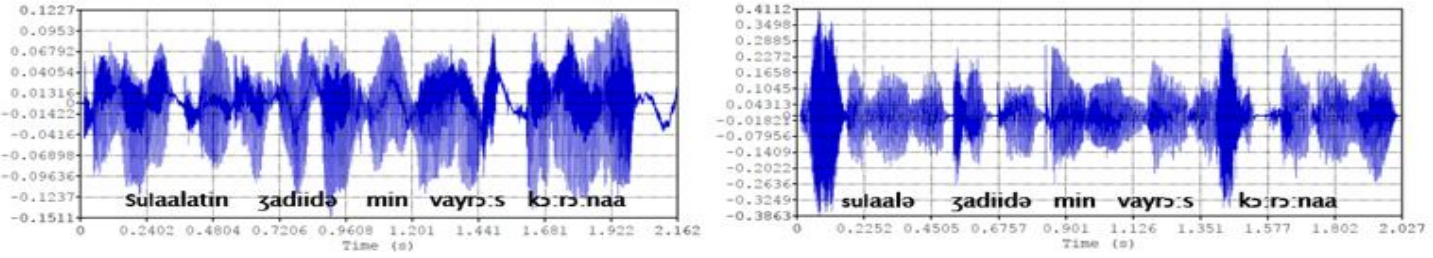


Fig.(24) The mean amplitude of the national female newscasters' waveforms (1NF3/2NF3)

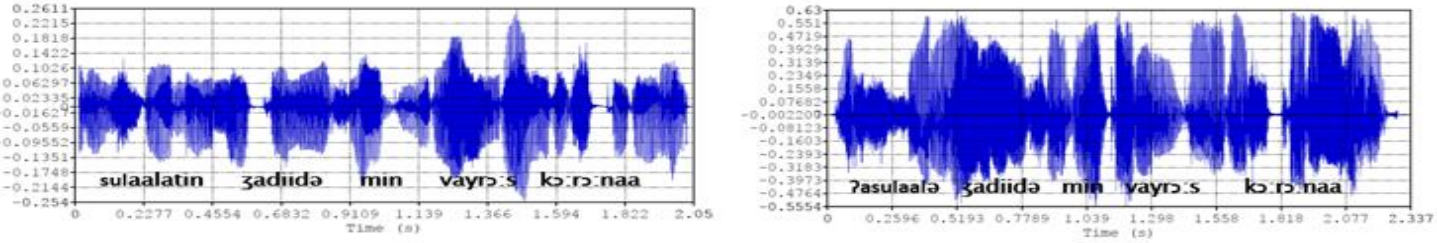


Fig.(25) The mean amplitude of the international female newscasters' waveforms (3IF3/4NF3)

6.2.3 Intensity

Intensity refers to the voice's power, and it represents the force that moves air from the lungs to the vocal folds. Listeners perceive the intensity of the voice as a volume at which they can hear that voice. Radio announcers are supposed to produce strong enough intensity to carry a sense of security and seriousness; therefore, it should be neither too high nor too low (Rodero, 2012: 227). The data analysis results show that there is a variation in producing the first utterance /ʔahlanbikum /that is produced by the national and international newscast announcers is as follows: (1NM1=75.13dB, 2NM1=81.37dB,3IM1= 68.02, 4IM1=78.51). The intensity reading values of the second utterance /ʔabrazulƐʌnaawiin / which is produced by both groups of newscasters are: (1NM2=73dB, 2NM2=71.11 dB, 3IM2=74.73 dB, 4IM2=78.11dB), and those of the third utterance /sulaalatanʒadiidə min vɑyrɔːs kɔːrɔːnaa/ are as follows: (1NM3=73.09dB, 2NM3=78.76dB, 3IM3=72.91dB, 4IM3=77.77dB), in that order see table (5).

Table(5) The mean intensity of the national and international male newscast broadcasters

Intensity Reading Values in dB			
	1NM1	**1NM2**	**1NM3**
	75.13	**73**	**73.09**
	2NM1	**2NM2**	**2NM3**
	81.37	**71.11**	**78.76**
	3IM1	**3IM2**	**3IM3**
	68.02	**74.73**	**72.91**
	4IM1	**4IM2**	**4IM3**
	78.51	**78.11**	**77.77**

The results of the analysis display a noticeable contrast. The intensity values among the newscasters reveal that the national newscaster utilizes a higher intensity value in reading the first utterance that is found to be : (2NM1=81.37dB) than the other announcers, followed by the international newscaster (4IM1=78.51) and then the national newscaster (1NM1=75.13) who also uses a higher intensity in reading this utterance than the international newscaster (3IM1=68.02) who produces this utterance with a lower intensity .The figures below display the mean intensity values of both national and international newscasters' production of the first utterance/ʔahlanbikum/

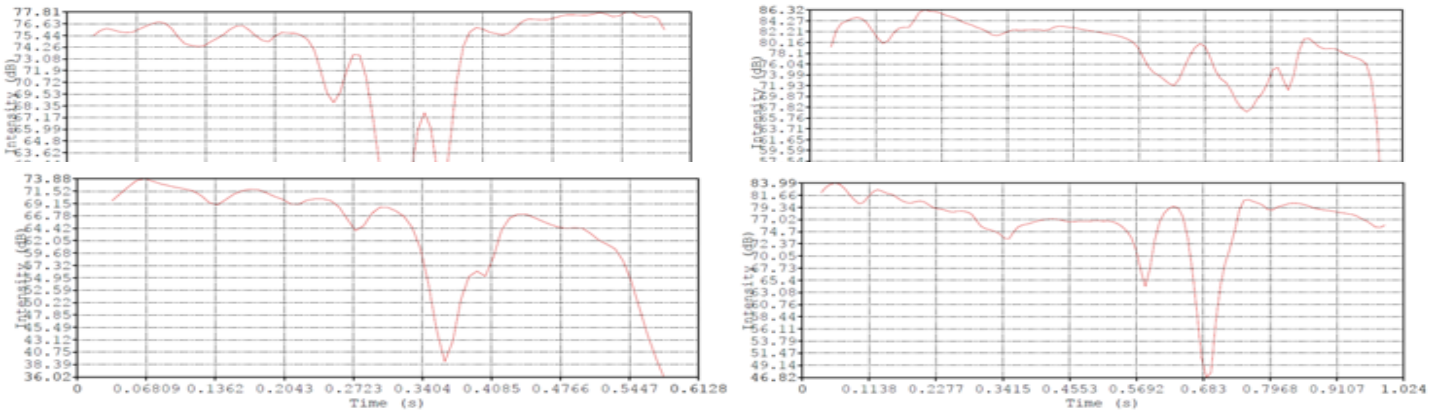


Fig.(27) The intensity value of (3IM1/4IM1) /ʔahlan bikum / utterance

It can be observed that the second utterance /ʔabrazulƐʌnaawiin /that is produced by the national and international newscasters, is produced with a higher intensity by the international newscaster (4IM2= 78.11dB), then followed by the international newscaster(3IM2=74.37dB), then comes the national newscaster (1NM2=73 dB), and the national newscaster(2NM2=71.11dB). The production of this utterance with an increase in the vocal intensity is especially noticed when noise is present in the speech context, as represented by the background music . The figures below show the mean intensity of both the national and international newscasters' in production of the second utterance /ʔabrazulƐʌnaawiin/

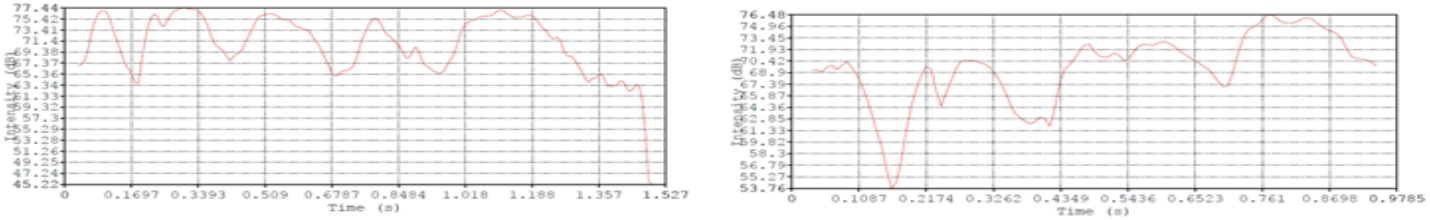


Fig.(28) The intensity value of (INM2/2NM2) newscaster's / ʔabrazul Ɛʌnaawiin/ utterance

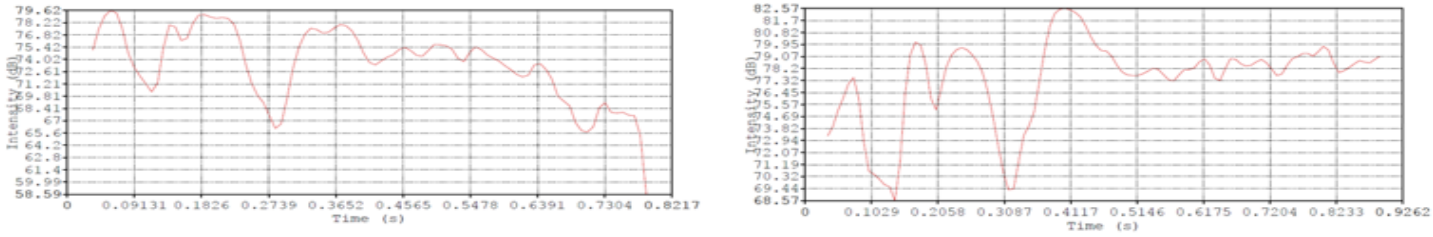


Fig.(29)The intensity value of (3IM2/4IM2) newscaster's /ʔabrazul Ɛʌnaawiin/ utterance

The results of the data analysis expose a slight variation in the intensity values in reading the third utterance /sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa/ ,among the national and international newscasters. The utterance is produced with an increased intensity by (2NM3=78.76dB and 4IM3=77.77dB). In contrast, it is produced with a lower intensity by (1NM3=73.09dB, and 3IM3=72.91dB). Producing speech with a relatively increased intensity projects the voice to a distant listener so as to be more intelligible. The figures below illustrate the intensity mean of both groups of male newscasters in producing the third utterance / sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa/

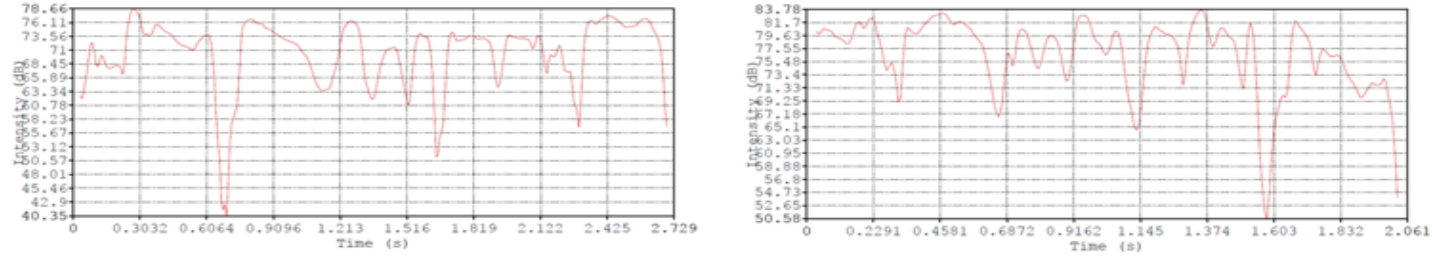


Fig.(30) The intensity value of (1NM3/2NM3) newscaster's / sulaalatan ʒadiidə min vɑyrɔ:s kɔ:rɔ:naa/

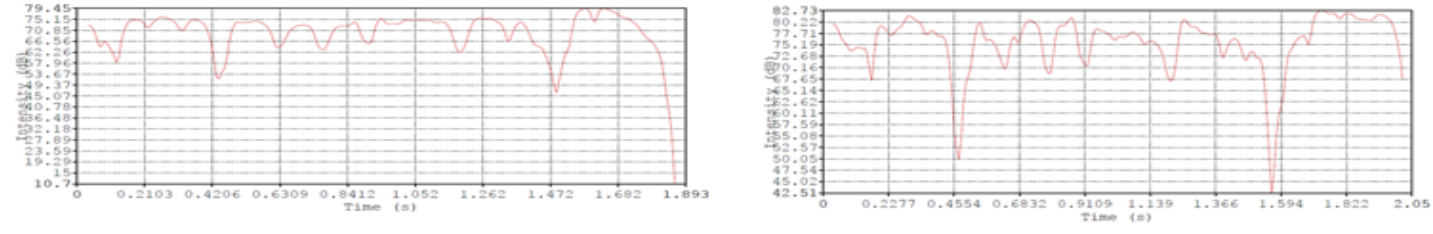


Fig.(31) The intensity value of (3IM3/4IM3) newscaster's/ sulaalatan ʒadiidə min vɑyrɔ:s kɔ:rɔ:naa/

utterance

The national and international female newscasters produced the same three utterances, and the intensity readings of the first utterance /ʔahlanbikum/ are as follows: (1NF1= 68.53dB , 2NF1=69.15dB , 3IF1=67.09dB , 4IF1=80.23dB).The intensity values of the second utterance /ʔabrazulƐʌnaawiin / which is produced by the female national and international announcers are as follows: (1NF2=67.68dB , 2NF2=80.82dB , 3IF2=71.11dB , 4IF2=78.24dB) . Moreover, the intensity values of the third utterance / sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa / are as follows: (1NF3=65.18 dB , 2NF3=71.6dB , 3IF3=68.89dB , 4IF3=79.61dB) , as it is shown in the table (6) given below.

Table(6) The mean intensity of the national and international female newscast announcers

Intensity Reading Values in dB			
1NF1	**1NF2**	**1NF3**	
68.53	**67.68**	**65.18**	
2NF1	**2NF2**	**2NF3**	
69.15	**80.82**	**71.6**	
3IF1	**3IF2**	**3IF3**	
67.09	**71.11**	**68.89**	
4IF1	**4IF2**	**4IF3**	
80.23	**78.24**	**79.61**	

The results of the data analysis show that the first utterance /ʔahlanbikum / is produced with a higher intensity value by both the national female announcers (2NF1=69.15dB and1NF1=68.53dB), in this order than the international female announcer (3IF1=67.09dB).In contrast, the other international newscaster who produces this utterance with a higher intensity value than others, is as follows: (4IF1=80.23), The figures below show the mean intensity values of both national and international female newscasters in producing the first utterance /ʔahlanbikum/.

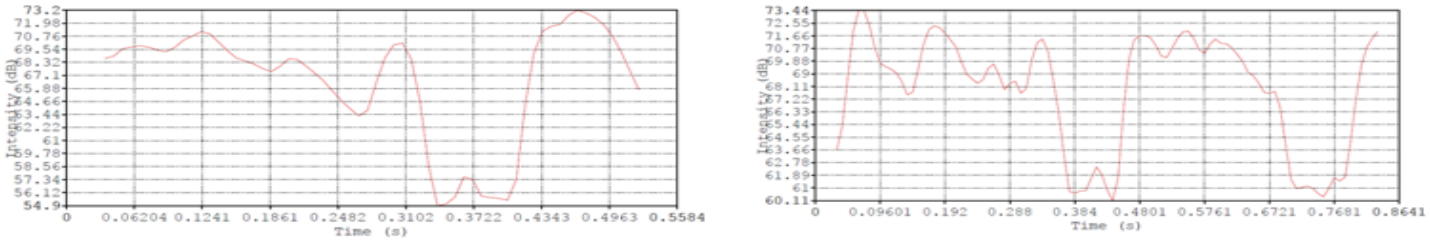


Fig.(32) The intensity value of (1NF1/2NF1) newscaster's/ʔahlan bikum/. utterance

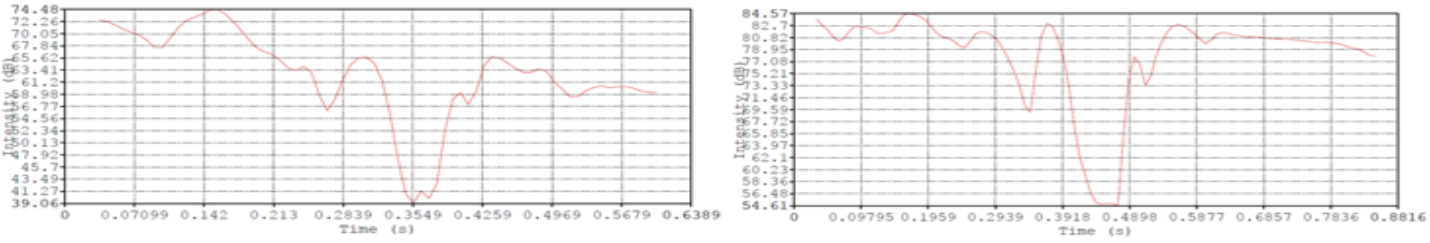


Fig.(33) The intensity value of (3IF1/4IF1) newscaster's /ʔahlan bikum/.utterance

On the other hand, the analysis of the results displays a variation in the intensity values of the second utterance /ʔabrazulƐʌnaawiin / that is read by both groups of female newscasters. This utterance is read with a high-intensity level by one of the national female newscasters, and one of the international female newscaster (2NF2=80.82dB and 4IF2= 78.24dB), in contrast to the other newscasters (1NF2=67.68 dB and 3IF2=71.11dB) who produced the utterance with a lower intensity than the former ones, respectively. The figures below show the intensity values of the national and international female newscasters' production of the utterance /ʔabrazulƐʌnaawiin /

Furthermore, the results analysis show that the third utterance/sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa / which is uttered by the

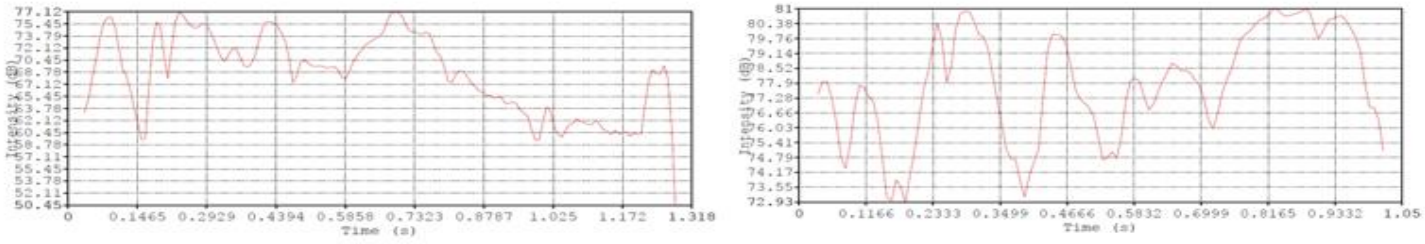


Fig.(35) The intensity value of (3IF2 /4IF2) newscaster's utterance

national and international female newscasters is read with a high intensity value by the international newscaster(4IF3=79.61) followed by the national newscaster(2NF3=71.6). In contrast, the other newscasters produced this utterance with a low vocal effort: the national newscaster (1NF3=65.18) and the international newscaster (3IF3=68.89). The figures below show the intensity values of the female newscasters' utterances.

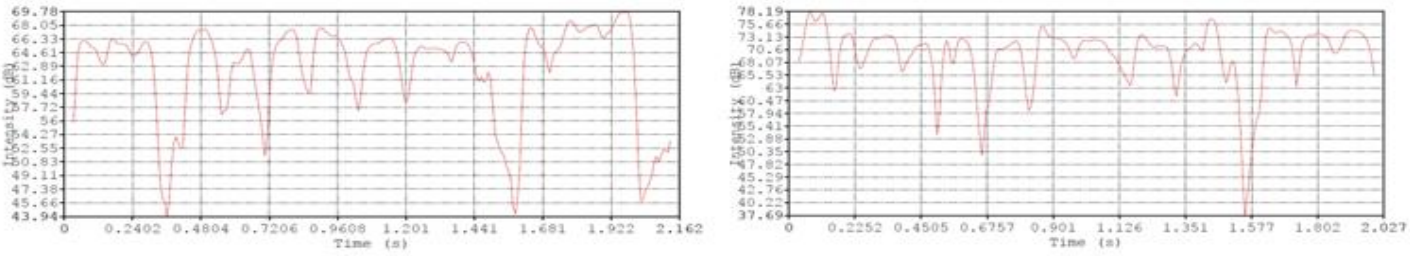


Fig.(36) The intensity value of (1NF3/2NF3) newscasters' utterance

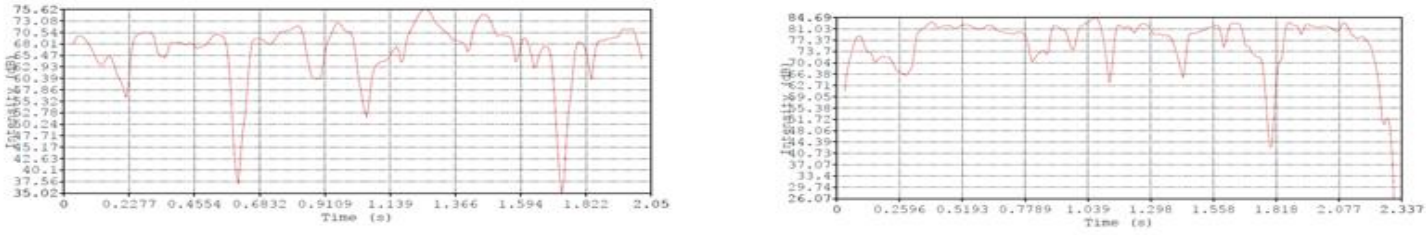


Fig.(37) The intensity value of (3IF3/4IF3) newscasters' utterance

7.2.4 Duration of time

The duration of time is the total time that is needed to produce speech sounds. The period can be calculated and determined, but the significant time parameter is not absolute but relative (Alani, 1970:75). Variable duration depends on the type of the speaker, type of utterance, and asymmetry in an individual's speech rate: slow to normal, greater than normal,(medium) to fast. The data analysis results reveal the total duration of each utterance that is produced by the national and international male newscasters. The total duration values of the first utterance /ʔahlanbikum/ are measured to be found as (1NM1= 0.769501 sec. , 2NM1= 0.912063 sec. , 3IM1= 0.612766 sec. , 4IM1= 1.04490 sec.). Moreover, the total duration values of the second utterance /ʔabrazulƐʌnaawiin / are as follows: (1NM2= 1.527052sec. , 2NM2=0.978481sec. , 3IM2=0.821746sec. , 4IM2=0.926236sec.) , and the total duration values of the third utterance/ sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa/are measured as (1NM3=2.728685sec. , 2NM3= 2.019864sec., 3IM3=1.892766sec. , 4IM3= 2.649501sec.) respectively , as shown in the table below .

Table (7) The total duration values of the national and international newscasters' utterances

Announcer	1NM1	1NM2	1NM3
Total Duration of Time/sec.	0.679501	1.527052	2.728685
Announcer	2NM1	2NM2	2NM3
Total Duration of Time/sec.	0.912063	0.978481	2.019864
Announcer	3IM1	3IM2	3IM3
Total Duration of Time/sec.	0.612766	0.821746	1.892766
Announcer	4IM1	4IM2	4IM3
Total Duration of Time/sec.	1.024490	0.926236	2.649501

The results prove that the average duration of the utterances produced by the national and international male newscasters is diverse. The variation of the utterances' duration reflects the announcer's speech rate in reading the text and delivering an intelligible message for the listener. The first utterance /ʔahlanbikum / is produced with a normal speech rate by one of the international newscasters and one of the national newscasters (4IM1=1.024490 /sec. , 2NM1=0.912063/m.sec.), respectively. In contrast, the other national and international newscasters utilize a slower speech rate in producing this /ʔahlanbikum/ utterance than the former newscasters as(1NM1=0.679501 m.sec. , 3IM1=0.612766). The average duration of the second utterance /ʔabrazulƐʌnaawiin / is produced with a slow speech rate by the national announcers who are (1NM2=1.527052 /sec. , 2NM2=0.978481/m.sec) respectively, while it is produced by the international announcers with a speech rate that can be described as a medium one. Concerning the third utterance / sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa /, it is produced with a slow to normal speech rate by one of the national newscasters and one of the international newscasters, namely: (1NM3=2.019864/sec. , 3IM3= 1.892766/sec.). In contrast, the other national and international newscasters produced this utterance with a slower rate than the formers, namely: (1NM3=2.728685 / sec. , 4IM3= 2.649501/ sec.)

The national and international female newscasters produced the same three utterances, and the total duration is measured to be found for the first utterance /ʔahlanbikum/ as (1NF1=0.558367 sec. , 2NF1=0.864104sec. , 3IF1=0.638866sec. , 4IF1= 0.881565sec.). The total duration of the second utterance /ʔabrazulƐʌnaawiin / is found as (2NF2=1.099093sec. , 2NF2=1.198027sec. , 3IF2=1.318073sec. , 4IF2=1.0499070sec.), and the third utterance / sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa / is read to be as follows: (1NF3= 2.161701sec. , 2NF3=2.027211sec. , 3IF3=2.049501sec. , 4IF3=2.336848 sec.), as apparent in the table below.

Table(8) The total duration of national and international newscasters' utterances

Announcer	1NF1	1NF2	1NF3
Total Duration of Time/sec.	0.558367	1.099093	2.161701
Announcer	2NF1	2NF2	2NF3
Total Duration of Time/sec.	0.864104	1.198027	2.027211
Announcer	3IF1	3IF2	3IF3
Total Duration of Time/sec.	0.638866	1.318073	2.049501
Announcer	4IF1	4IF2	4IF3
Total Duration of Time/sec.	0.881565	1.049070	2.336848

The results reveal that the average duration of the national and international female newscasters' production of the utterances is variable. The total duration of the first utterance /ʔahlanbikum / is produced with a medium to fast speech rate by one of the national newscasters and one of the international newscasters who are (4IF1=0.881565/m.sec. , 2NF1= 0.864104/m.sec.)in this order, while the other national and international newscasters produced this utterance faster than the formers, thus having the values: (1NF1=0.558367/m.sec. , 3IF1=0.638866/m.sec.), respectively . The results of the second utterance /ʔabrazulƐʌnaawiin / is produced with a greater than normal (medium) speech rate by the national female newscaster (1NF2= 1.099093lm.sec) and the international female newscaster(4IF2=1.049070 /m.sec.), but it is produced with a normal speech rate by the international female announcer(3IF2=1.318073/m.sec.) and the national female announcer (2NF2= 1.198027/m.sec.).The results of the average duration of the third utterance indicate that both the national and international female newscasters utilize a slow to normal speech rate in producing the / sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa/ utterance. There are slight variations in the speed of announcing this utterance that can be described as (2NF3=2.027211/ sec. , 3IF3=2.049501/ sec.) and (1NF3=2.161701/sec. , 4IF3=2.336848/sec.), respectively.

7. Conclusions

The results of the data analysis prove that female announcers utilize a higher fundamental frequency in producing the first utterance /ʔahlanbikum /. The second utterance /ʔabrazulƐʌnaawiin / is read with a higher fundamental frequency by (Iraqi media network female announcer and MCD female announcer) than male newscasters of (Iraqi media network and MCD). In contrast, Al-Mirbad male announcer and BBC male announcer utilize a higher fundamental frequency than BBC female newscaster and Al-Mirbad female

broadcaster. The third utterance / sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa /is read with diverse fundamental frequency among male and female announcers.The study results affirm that the national male announcer in the (Iraqi media network) reads the news with a higher amplitude value than the female announcer in the same station. The BBC male announcer reads the news with a higher amplitude value than the BBC female announcer. The results confirm that Al-Mirbad male announcer produces utterances with a higher amplitude than Al-Mirbad female announcer except for the second utterance /ʔabrazulƐʌnaawiin / which is produced with a higher amplitude by Al-Mirbad female announcer. The MCD female announcer reads the news with a higher amplitude than the MCD male announcer.The results affirm that male announcers produce utterances with a higher intensity than females announcers. In contrast, the MCD female announcer used a higher intensity in producing the three utterances than the MCD male announcer.The results also show that the national male announcers who affiliate to (Iraqi media network and Al-Mirbad) and the international BBC male announcers are faster in reading news than the female announcers. In contrast to MCD announcers; there is a slight variation in speed in reading news utterances. The first utterance /ʔahlanbikum / and the third utterance /sulaalatanʒadiidə min vɑyrɔ:s kɔ:rɔ:naa/are read in a faster way by MCD female announcer than MCDmale announcer, but the second utterance /ʔabrazulƐʌnaawiin/ is read faster by the male announcer than the female one.

The present study proves its hypothesis that there is a clear variation in the acoustic parameters produced by national and international newscasters . The national male/female newscasters utter the three corresponding utterances with different fundamental frequency, amplitude, intensity and duration, in contrast with the other international male/female newscasters .The results verified the variation in the acoustic properties among announcers due to the gender variation.

Bio-Profile

BalqisIssaGatta Rashid got her Bachelor of Arts in English Language from the College of Arts / Basrah University /Iraq in 1985. Three years later, she got her M.A. in English Phonetics and Phonology from the same college. In 1997, the college of Arts granted her Ph.D. in General Linguistics / English Phonetics and Phonology. She has been ranked Professor in the field of phonetics and phonology since 2005.

HibaJeburHamza has got Bachelor of linguistics in English Language from University of Basrah , College of Education for Human Sciences /Iraq in 2009. Now, she is M.A. student studyingEnglish Phonetics and Phonology, in the same collage .Email:hiba.h7mza87@gmail.com

8.References

Al-Ani, Salman H.(1970).Arabic Phonology :An Acoustic and Physiological Investigation. MOUTON. The Huge .Paris.
Bachorowski,Jo-Anne and Owren, Michael J. (1999). " A coustic Correlates of Talker Sex and Individual talker identity are present in a short vowel segment produced in running speech " .J.Acoustic Soc. AM 106(2), Augest1999.https://doi:org/10.1121/1.427115
Abdullah HasanJabbar. et, al (2018), Chemical synthesis and characterization of silver nanoparticles induced biocompatibility for anticancer activity. Indian Journal of Public Health Research & Development, 9 (11). pp, 352-357.
Ball, Martin J. and Rahilly, John (1991) . Phonetics : The Science of Speech. Routledge, Taylor and Francis Group London and New York.
Ball, Martin J. and Lowry, Oriam (2001). Methods in Clinical Phonetics .Cohurn Publishers
Boersma,P. and Weenink,D. (2020). Praat: A System for doing Phonetics by Computer , Computer Program available at http://www.praat.org or http://www.fon.hum.uva.nl/praat/
Clark, John and Yallop,Colin(2000) . An Introduction to phonetics and Phonology (2nd ed.) .B;ackwell
David, Crystal(2008). A Dictionary of Linguistics and Phonetics(6th ed.) .BLACKWELL Publishing
Elsdon, Denise(2014). "The Top Qualities of a Great Broadcaster" .In Media Transcription. Available at https://www.alphabetsecretarial.co.uk/top-qualities-great-broadcaster/at 6/2/2021
Fant, Gunnar(1970). Acoustic Theory of Speech Production (2nd ed.) .MOUTON(The Huge Paris)
Fant, Gunnar (1981). The Source Filter Concept in Voice Production . J.STL-QPRSR, Vol.22,No.1,pp.021-037,doi=10.1.1450.7031
Fitch,W.Tecumseh and Giedd, Jay(1990)." Morphology and Development of the Human Vocal Tract: A Study using Magnetic Resonance Imagining. The Journal of Acoustic of the Society of America.106(3),DOI:10.1121/1.427148
Fry, D.B.(1976) . Acoustic Phonetics :Acourse of Basic Readings . Cambridge University Press
Harson, Helen M.(1995)." Glottal Characteristics of Female Speakers". Harverd University , Cambridge Massachusetts (Published PH.D Dissertation)
Jones, Daniel(1967). The Pronunciation of English .Cambridge University Press
Klatt, Dennis H. and Klatt, Laura C. (1990)." Analysis, Synthesis, and Perception of Voice Quality variations among female and male talkers".J. Acoustic Soc.AM. Vol.87,Issue(2)1990 , https://doi.org/10.1121/1.398894
Ladefoged,Peter(1996). Elements of Acoustic phonetics (2nd ed.) .The University of Chicago Press
Ladefoged, Peter and Sandara,Ferrari(2012). Vowels and Consonants (3rded.) WILLY-BLACKWELL
Mcleish,Robert(2005) . Radio Production (5th ed.) . Focal Press.ELSEVIER
Munson,Benjamin and Babel Molly(2019)." The Phonetics of Sex and Gender", as cited in Katz, WilliamF. And Assmann, Peter F.(2019) .The Routlege Handbook of Phonetics . Routlege,Taylor Francis Group London and New York
Pickett, J.M.(1988). The Sounds of Speech Communication: A Primer of Acoustic Phonetics and Speech Perception
SalimOudahMezan, SalihMeri Al Absi, Abdullah HasanJabbar et al., Synthesis and characterization of enhanced silica nanoparticle (SiO2) prepared from rice husk ash immobilized of 3-(chloropropyl) triethoxysilanea, Materials Today: Proceedings, https://doi.org/10.1016/j.matpr.2020.12.564
Rogers, Henery (1991) . Theoretical and Practical Phonetics . University of Toronto
Rodero,E(2013) . The Perception of a Broadcasting Voice. US-China Education Review A, ISSN2161-623X ,Vol.(3), No,(4) ,pp.225-230
Rodero,E., Diaz-Rodriguez, G.andLarrea, Olatz(2017). "A Training Model for Improving Journalists' Voice. "Journal of voices-Elsevier, Vol(32),Issue(3) .DOI:10.1016/j.jvoice.2017.05-006
Trask, R.L.(1996). A Dictionary of Phonetics and Phonology. Routledge.

Author Information

Prof.Dr. BalqisI.G.Al-Rashid	**Candidate Hiba Jebur Hamza**
The University of Basra, College of Education for Human Sciences, Department of English Language	The University of Basra, College of Education for Human Sciences, Department of English Language