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Acoustic Properties Of Arabic National And International Broadcasted News Of Sport: A Contrastive Study

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Abstract

The study aims to determine the differences in acoustic properties: the fundamental frequency, amplitude, intensity, and duration of time of the sports news bulletin broadcasted by national and international broadcasters, considering the broadcaster's gender (male/female). The data are twenty-four identical phrases uttered by sports broadcasters from four main radio stations, two of which are national in Iraq, namely: (Iraqi Media Network, which includes (The Republic of Iraq radio and Al-Iraqiya Radio), and the other national radio station is Al-Mirbad radio. The other group consists of international radio stations: BBC Arabic and Monte Carlo Doualiya -MCD.The study assumes that the acoustic properties of male and female national broadcasters' voices in sports news broadcasts differ from those presented by international broadcasters. Moreover, the study examines the possibility of similarity in some acoustic characteristics of some broadcasted utterances. Once the data is segmented, it is processed using PRAAT acoustic analysis software program (Boersma&Weenink, 2020). The results of the study prove the above hypothesis that local broadcasters broadcasted the utterances of the sports newscast with different acoustic properties than those presented by international broadcasters. The study also demonstrates the difference in acoustic properties between international and national broadcasters due to the gender difference. Despite the noticeable differences in the acoustic properties, the study clarified a similarity in the fundamental frequency characteristic between a national broadcaster and an international broadcaster in one of the utterances broadcast. Also, the presence of such a similarity or convergence in the acoustic properties of the national broadcasters compared to the international ones indicates the ability of national broadcasters to reach the international broadcasting level with little broadcasting training and modern technology

Introduction

The human vocal apparatus involves, among other things, the lungs and the lower airway that operates to provide air pressure and airflow. The vibration of the vocal folds modulates the airflow and adjusts the voice source, and hence produces sounds. Speech production demands a careful control and an adjustment of acoustic parameters: the fundamental frequency, amplitude, intensity, and voice quality. Physiologically speaking , such adjustments occur through laryngeal muscle activation and the adduction and abduction of the vocal folds and the glottal configuration. Speech production comes from a sophisticated seamless-structure -acoustic interaction process, that is based on geometry and material characteristics of the lungs, larynx, and vocal folds. The perception of voice production is based on the way individuals use and control the co-variations among the fundamental frequency, vocal intensity, and voice quality (Zhang,2016). No two people articulate the same thing similarly. Various factors related to the speaker's geographical and social region and the knowledge-related status are responsible for pronunciation differences. Speech styles are also variable for different speakers. There is either a fast colloquial style or a slow formal 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 sounds are pitch, loudness, and voice quality(Daniel, 1967).
Modern technology and techniques can be used to analyse 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 amplitude, intensity and duration. The present study focuses on investigating the discrimination of the acoustic properties of the national and international Arabic broadcasted news of sport.

1. The Acoustic Properties of Speech Production

When people produce speech, one can acoustically recognize one of them . For example, females usually produce a higher pitch level than males, and members of a particular speech community may produce vowels and consonants differently. The recognition of these constant merits of speech outcome may lead people to focus on the others' speech, whether they speak more loudly than usual, or at a higher pitch level than is normal. The temporary adjustment to speech productioncan lead us to deduce that a certain speaker is angry, enthusiastic, or nervous. All of these features, e.g. high pitch and loudness are aspects of acoustic production (Ball&Rahilly,1991:155)

Frequency is a technical term that refers to the number of cycles per second. When investigating the range of fundamental frequency that is distributed in speech, most of the differences in the range of the fundamental frequency occur because of some factors, such as gender variation and the type of discourse. Hollienn and Shipp(1972) contend that the typical fundamental frequency of the voice in speech is 120Hz for men and 210Hz for women. The mean values of F0 may vary slightly because of age. The vital feature of laryngeal activity during oral speech productionis the fundamental frequency of the vocal fold vibration or the intensity at which the glottal pulse is released into the vocal tract. The fundamental frequency varies considerably during speech (Fry, 1979, as cited in Ducote,1982:1). The average fundamental frequency for each speaker depends on different factors, but generally speaking, children utilise a higher range while men use a lower range than women who use a modulate range (Ducote, 1983:1).

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)

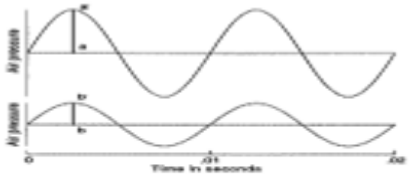

Fig1 Two sounds , one with double the amplitude of the other (adopted from Ladefoged , 1996:16) .

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 phenomenonthat correlates with the acoustic intensity of a sound (Trask, 1996: 211). 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 and Sandara(2012: 23) note that in the case of pushing more air out of the lungs this causes the amplitude of the vocal folds' vibration to become larger and hence louder; that is to say, it raises the pitch level. In a speech, the resonances of the vocal tract are called formants; the basic formant frequency of the adult male is 500 Hz (Pickett, 1980: 24). As each sound has its own frequency and intensity; also it has its 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 several factors among which are: 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) .Resonance refers to the natural tendency of an object to vibrate at a certain frequency. The source of a sound has a natural resonating frequency, that depends on its mass, length, and tension.

2. The Acoustic Model of Speech Production

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) simplifies an analogous situation related to 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 building up the air stream, and then it results in friction or a transient release of the airstream. In the case of voiced sounds, there is a modulation of the airstream 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 folds. 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. The term 'aerodynamic' reveals how airflow causes the periodic vibrations of phonation. On the other hand, the myoelastic component is first reported by Muller (1837) to mean that the airflow passes through the larynx applying different tensions on the surrounding muscles. The vocal folds vibrate when they are adducted to prevent the airstream from going out, and this causes an increase in the longitudinal tension along the vocal folds (Laver, 1980: 95-6).

When the glottis is closed the inner parts of the vocal folds are in contact. The average depth of this contact in a male larynx is about (2-5 mm) (Laver,1994: 192). The term ' myoelastic' reflects the elastic forces that make

muscles return to their neutral position after adduction (Gick et al., 2013:81). Because of the respiratory pressure, the subglottal air pressure becomes high enough to overcome the muscles' tension, causing the vocal folds to be closed, and then allowing them to separate. The lower part of the vocal folds separates before the upper part. The air passes through the pharynx and removes some of the subglottal pressure. The vocal folds' glottal margins form a narrow constriction that serves as ' a venture tube ', showing the aerodynamic effect.

3. Broadcasting Speech

People who work in the broadcasting industry try to develop their voice for audiovisual media so 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. Radio broadcast media depends on the human voice to connect with the audience. Broadcasters' voices can be described as an identity that represents their personality. Mcleish(2005: 115) contends 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 includes 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) . Rodero(2013 : 227-228) confirms that the use of voice is based on the combination of three acoustic characteristics: intensity, pitch, and timber. First, the intensity which is the energy of the voice is based on the air pressure exerted on the vocal folds; the power of this pressure causes the vibration of the vocal folds. 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 neither be 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 the 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. The audience prefers low-pitched voices, resonant timbers, and clear and strong intensities. Voice quality is a complex property that 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 of this, nonprofessional speakers articulate with little resonance because they do not open their mouths enough (Rodero, et al, 2017: 3).

4. The Acoustic analysis of Sportscast's Utterances

4.1 Procedures and Stimuli

To obtain a contrastive study, the researcher must process two sets 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 are concerned with sportscast's utterances produced by different genders (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 which are national radio stations in Iraq, namely (Iraqi Media Network which involves: The Republic of Iraq Radio and Al-Iraqiya Radio), and Al-Mirbad Radio. The other set comprises international radio stations, namely (BBC Arabic and MonteCarloDoualiya- MCD) . Furthermore, the researcher makes 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's (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 speeches, and the other half involves male broadcasters' for both the national and international groups.
3. The researcher intends to acoustically analyse the utterances by using the Praat program (Boersma and Weenink,2020) to obtain the acoustic properties of the announcers' speech: the fundamental frequency, intensity, amplitude, and duration of time.

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.

5.2The Range of the Fundamental Frequency

The mean fundamental frequency valuesare measured for sportscasters' utterances who produce sports news in the selected national and international radio stations, viz(Iraqi Media Network(IMN) , Al-Mirbad , the BBC and Monte Carlo Doualiya-MCD). The fundamental frequency is calculated for three corresponding utterances produced by the national and international sportscasters . The utterances comprise a greeting phrase / ʔahlanbikum/ أَهلاً بِكمْ (Welcome) , /θalaaθatʔahdaafmuqaabillaa ʃayʔ/ ثَلاثَة أَهْدافْ مُقابِل لا شَيْء (Three goals for nothing), and a well-known utterance is produced by all national and international male/female sportscasters which is /dawriiʔabṭaal ʔɔ:rubbaa/ دَوري أَبْطال أُورُبّا (Champions League). The results affirm that the national male sportscaster's fundamental frequency for the first utterance is (1NM1=552.4Hz). The second utterance has a fundamental frequency (1NM2=493.2 Hz), whereas the third utterance has a fundamental frequency (1NM3=552.4). On the other hand, the second national male sportscaster produced the three utterances with a fundamental frequency as follows:(2NM1=730.2 Hz, 2NM2=434 Hz, 2NM3=374.7Hz).

Moreover, the fundamental frequency that is used by the international broadcaster the BBC male sportscaster is different. The results reveal that the fundamental frequency has different values in producing the three utterances: (3IM1=434Hz. , 3IM2=315.5 Hz, 3IM3=434Hz), respectively. On the other hand, the mean fundamental frequency values of the other international male sportscaster of MCD in reading the three utterances are as follows : (4IM1=493.2Hz, 4IM2=374.7 Hz, 4IM3=552.4 Hz), as the results are outlined in table (1) given below.

Table(1) The mean fundamental frequency (F0) of the national and international male sportscasters' utterances

F0 Measuring (Hz)		
1NM1	1NM2	1NM3
552.4	493.2	552.4
2NM1	2NM2	2NM3
730.2	374.7	374.7
3IM1	3IM2	3IM3
434	315.5	434
4IM1	4IM2	4IM3
493.2	374.7	552.4

The figures below illustrate the national and international broadcasters' mean fundamental frequency values of the sports news.

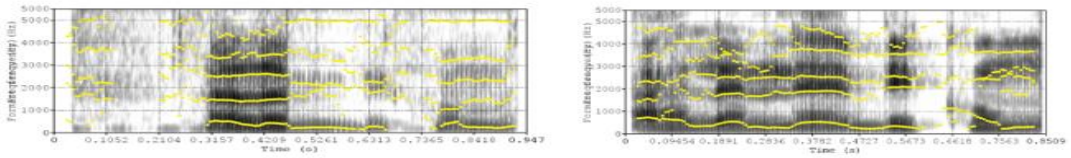

Fig. (2) The mean fundamental frequency of (1NM1/ 2NM1) /ʔahlan bikum/utterance

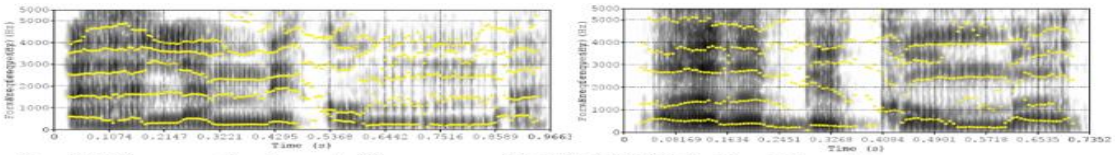

Fig. (3) The mean fundamental frequency of (3IM1/ 4IM1) /ʔahlan bikum/utterance

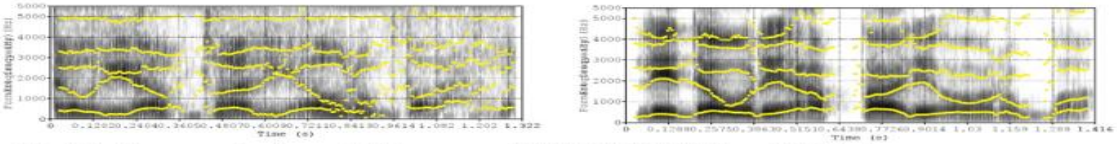

Fig. (4). The mean fundamental frequency of (1NM2/ 2NM2) /dawrii ʔabṭaal ʔɔ:rubbaa/ utterance

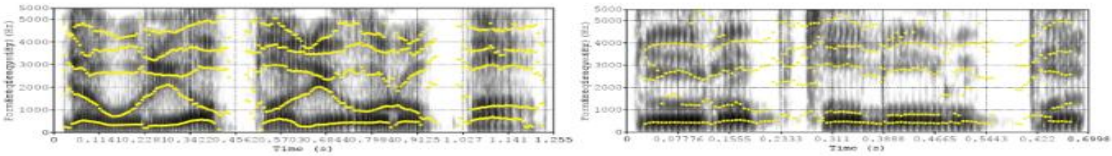

Fig.(5) The mean fundamental frequency of (3IM2/ 4IM2) /dawrii ʔabṭaal ʔɔ:rubbaa/ utterance

Fig.(6) The mean fundamental frequency of (1NM3/ 2NM3) /θalaaθat ʔahdaaf muqaabil laa ʃayʔ/utterance

The results of the data analysis display that the average of the fundamental frequency values associated with the national female sportscaster in the production of the first utterance /ʔahlanbikum/ is measured to be (1NF1=730.2Hz) , the fundamental frequency value of the second utterance/dawriiʔabṭaal ʔɔ:rubbaa/ is found to be (2NF2=670.9Hz), and the third one /θalaaθatʔahdaafmuqaabillaa ʃayʔ/ is read as(1NF3=611.7Hz) in this order. The same three utterances are measured for the second national female sportscaster, and the results are as follows: (2NF1=848.6Hz, 2NF2=434Hz, 2NF3=493.2Hz), respectively. In contrast, the results show that the international female sportscasters' fundamental frequency values who produced the same utterances of a sportscast are as follows: the first international female sportscaster produced the three utterances with a fundamental frequency value as (3IF1=315.5Hz, 3IF2=552.4Hz, 3IF3=434Hz) in this order. Furthermore, the results show different fundamental frequency values for the other international female sportscaster who produced the same three utterances, which are found to be(4IF1=611.7Hz, 4IF2=315.5Hz, 4IF3=670.9Hz), respectively. These results are summarized in the tablegiven below .

Table(2) The mean fundamental frequency (F0) of the national and international female sportscasters' utterances .

F0 Measuring (Hz)		
1NF1	1NF2	1NF3
730.2	670.9	611.7
2NF1	2NF2	2NF3
848.6	434	493.2
3IF1	3IF2	3IF3
315.5	552.4	434
4IF1	4IF2	4IF3
611.7	315.5	670.9

The following figures show the fundamental frequency values of both national and international female sportscasters' utterances .

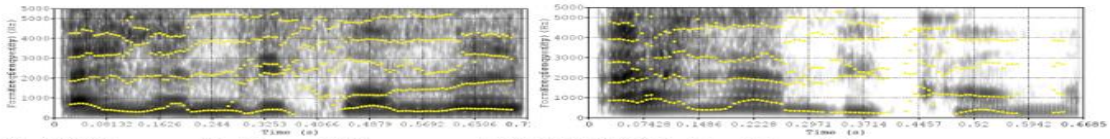

Fig. (8) The mean fundamental frequency of (1NF1/2NF1) /ʔahlan bikum/utterance

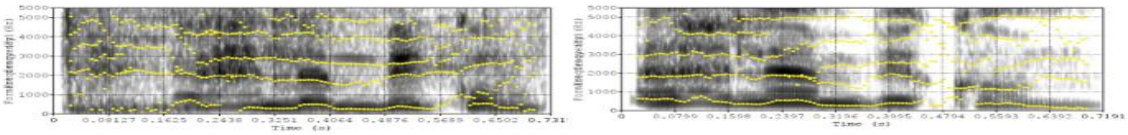

Fig. (9) The mean fundamental frequency of (3IF1/4IF1) /ʔahlan bikum/ utterance

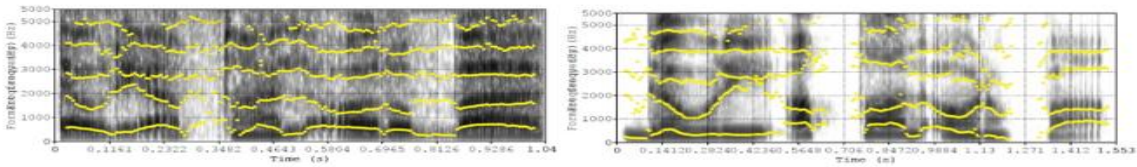

Fig.(10) The mean fundamental frequency of (1NF2/ 2NF2) /dawrii ʔabṭaal ʔɔ:rubbaa / utterance

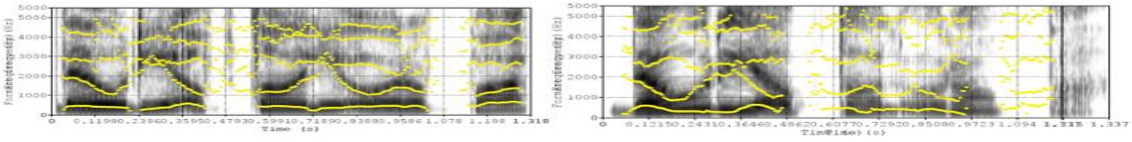

Fig.(11) The mean fundamental frequency of (3IF2/4IF2) /dawrii ʔabṭaal ʔɔ:rubbaa/ utterance

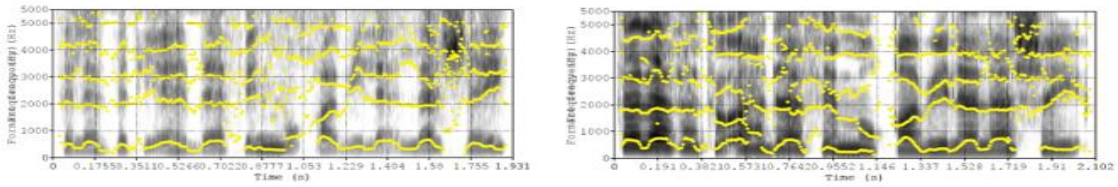

Fig.(12) The mean fundamental frequency of (1NF3/ 2NF3) /θalaaθat ʔahdaaf muqaabil laa ʃayʔ/ utterance

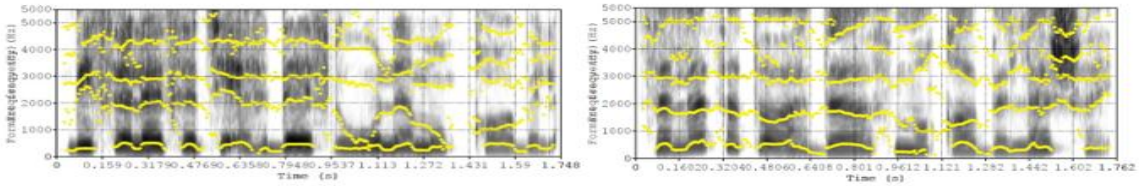

Fig.(13) The mean fundamental frequency of (3IF3/ 4IF3) /θalaaθat ʔahdaaf muqaabil laa ʃayʔ/ utterance

It is noted that broadcasters offer glamour, excitement, and enthusiasm while reading sportscast ;announcers reflect a proper degree of energy to provide their personality and convince listeners that they are enthusiastic in the production of the sports news. An energetic, pleasant voice for reporting the sportscast is a demand, and these merits can be investigated throughout the analysis of the acoustic variations among sportscasters. The data analysis results show variations in the mean fundamental frequency of the national and international sportscasters' utterances. The results denote that the national male sportscaster of Al-Mirbad radio produced the/ʔahlanbikum/ utterance with a higher fundamental frequency than the other national male sportscaster's, namely(2NM1=730.2 Hz , 1NM1=552.4Hz) .The results assert that the national sportscasters read it with a higher fundamental frequency than the international male sportscasters , viz(4IM1=493.2Hz , 3IM1=434Hz) , respectively. The same utterance wasproduced with higher F0 values by both national female sportscasters than the international female sportscasters , viz(2NF1=848.6Hz , 1NF1=730.2Hz , 4IF1=611.7Hz , 3IF1=315.5Hz) in this order. Simultaneously, the results reveal that the national female sportscasters uttered the/ʔahlanbikum/ utterance with a higher F0 value than the national and international male sportscasters, whereas the BBC's male sportscaster produced it with a higher fundamental frequency than his counterpart the BBC's female sportscaster. In contrast, the MCD's female sportscaster produced it with a higher fundamental frequency value than her counterparts the MCD's male sportscaster.

The second utterance / dawriiʔabṭaal ʔɔ:rubbaa/ has fundamental frequency reading values produced by the national and international sportscasters in the following order:([*]IMN male sportscaster =493.2Hz, Al-Mirbad male sportscaster=374.7Hz, MCD male sportscaster =374.7Hz, BBC male sportscaster =315.5Hz). On the other hand, the same utterance is produced by the female sportscasters of both national and international groups. The results show that the IMN female sportscaster produced the / dawriiʔabṭaal ʔɔ:rubbaa/ utterance with higher F0 values followed by the BBC female sportscaster than the others female sportscasters of Al-Mirbad and MCD , as follows:(IMN female sportscaster=670.9Hz, BBC female sportscaster=552.4Hz, Al-Mirbad female sportscaster=434 Hz , MCD female sportscaster=315.5Hz).

The fundamental frequency reading values of the third utterance /θalaaθatʔahdaafmuqaabillaa ʃayʔ/ as produced by the national and international male sportscasters are as follows: both national and international male sportscaster of IMN and MCD read it with a similar fundamental frequency value (552.4Hz). In contrast, the BBC's male sportscaster uttered it with a higher F0 than Al-Mirbad's male sportscaster, viz(BBC's sportscaster=434 Hz, Al-Mirbad sportscaster=374.7Hz). Moreover, the same utterance is read by the national and international female sportscasters. The F0 values' results are as follows:MCD's female sportscaster =670.9Hz, IMN's female sportscaster=611.7Hz, Al-Mirbad's female sportscaster=493.2Hz ,BBC's female sportscaster =434Hz , in this order.

4.2 Amplitude

The results of the data analysis delineate the mean amplitude of the national and international sportscasters' utterances . The results expose that the mean amplitude values of the male national and international announcers' voices in the production of the /ʔahlanbikum/ utterance are as follows:(1NM1= minimum> -0.2619 , maximum> 0.1604 , mean> 0.0376 , the total energy in air> 3.3538J/m^2), (2NM1= minimum> -0.1966 , maximum> 0.3685, mean> 0.0567, the total energy in air> 6.8435J/m^2) , (3IM1= minimum> -0.2051, maximum> 0.3949 , mean> 0.0867 , the total energy> 1.8173J/m^2), (4IM1=minimum> -0.4301 ,

[*] IMN is an abbreviation for the broadcaster who affiliates to the Iraqi Media Net Work

maximum> 0.4239 , mean> 0.0921 , the total energy in air> 1.5737). The mean amplitude reading values of the /dawriiʔabṭaal ʔɔ:rubbaa/ utterance that is read by both national and international male sportscasters are as follows:(1NM2= minimum> -0.0777 , maximum> 0.0551, mean> 0.0159 , the total energy in air> 8.4717J/m^2) , (2NM2= minimum> -0.2948 , maximum> 0.4260 , mean> 0.0766, the total energy in air> 2.0827J/m^2) , (3IM2=minimum> -0.2679 , maximum> 0.3856 , mean>0.0866 , the total energy in air> 2.3574J/m^2) , (4IM2=minimum> -0.3680 , maximum> 0.3890 , mean> 0.0973 , the total energy in air> 1.6570J/m^2) . Moreover , the third utterance that is read by the national and international sportscasters groups / θalaaθatʔahdaafmuqaabillaa ʃayʔ/ has the following mean amplitude values: (1NM3=minimum> -0.0752 , maximum> 0.0548, mean> 0.0170 , the total energy in air> 1.5243J/m^2) , (2NM3=minimum> -0.3074 , maximum> 0.4951,mean> 0.0729 , the total energy in air> 3.1801J/m^2) , (3IM3=minimum> -0.2171 , maximum> 0.4072 , mean> 0.0921 , the total energy in air> 3.8791J/m^2), (4IM3=minimum> -0.2257 , maximum> 0.3098, mean> 0.0485 , the total energy in air> 8.4263J/m^2), respectively . The table given below displays the mean amplitude values of the utterances produced by the national and international male announcers of sports news.

Table(3) The mean amplitude of the national and international male sportscasters' utterances

Amplitude Reading Values (Pascal)	Sportscaster	Minimum amplitude	Maximum amplitude	Mean amplitude	The total energy in the air(J/m^2)
	1NM1	-0.2619	0.1604	0.0376	3.3538
	1NM2	-0.0777	0.0551	0.0159	8.4717
	1NM3	-0.0752	0.0548	0.0170	1.5243
	2NM1	-0.1966	0.3685	0.0567	6.8435
	2NM2	-0.2948	0.4260	0.0766	2.0827
	2NM3	-0.3074	0.4951	0.0729	3.1801
	3IM1	-0.2051	0.3949	0.0867	1.8173
	3IM2	-0.2679	0.3856	0.0866	2.3574
	3IM3	-0.2171	0.4072	0.0921	3.8791
	4IM1	-0.4301	0.4239	0.0921	1.5737
	4IM2	-0.3680	0.3890	0.0973	1.6570
	4IM3	-0.2257	0.3098	0.0485	8.4263

First and foremost, sportscasters are appeared to present their distinguished style in announcing sports broadcasting. Sports broadcasting differs from news and social broadcasting. Sportscasters should modify their voices to produce a voice quality with a sense of humor, entertainment, and enthusiasm rather than seriousness. Through the data analysis, the results display that the variations of the mean amplitude parameter in the production of the greeting utterance /ʔahlanbikum/ by the national and international male sportscasters are as follows: (4IM1=0.0921 pascal, 3IM1=0.0867 pascal, 2NMC1=0.0567 pascal, 1NM1=0.0376 pascal) in this order . The results indicate that the international male sportscaster of the BBC and MCD utilised higher amplitude values than the national male sportscasters of IMN and Al-Mirbad radio stations . The figures below clarify the mean amplitude variations among the national and international sportscasters in the production of the /ʔahlanbikum/ utterance.

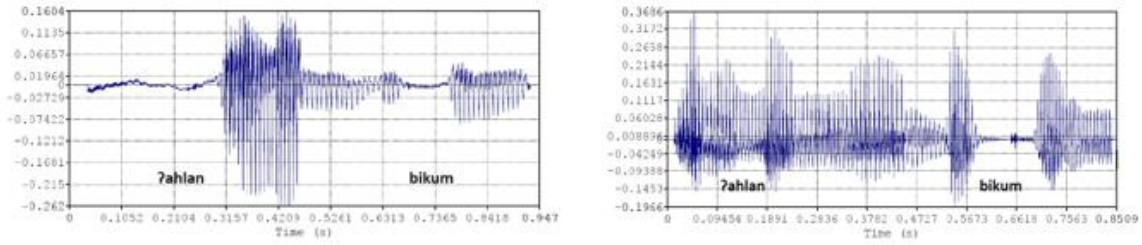

Fig. (14) The mean amplitude of the national male sportscasters' (1NM1/2NM1) utterances

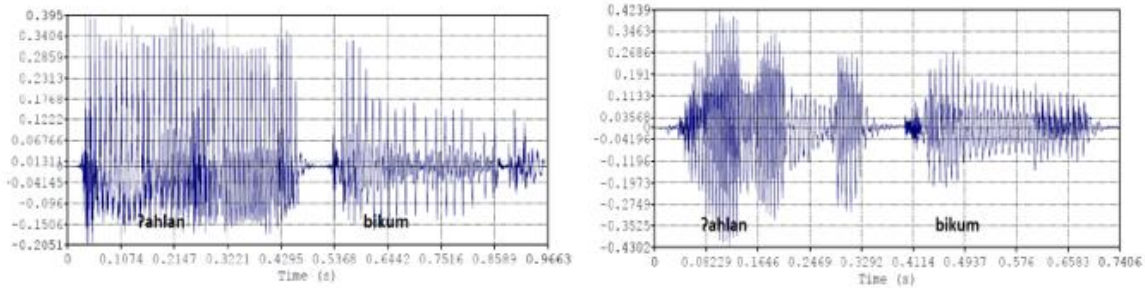

Fig. (15) The mean amplitude of the international male sportscasters' (3IM1/41M1) utterances

The analysis results exhibit that there is a difference in the mean amplitude values of the production of the / dawriiʔabṭaal ʔɔ:rubbaa/ utterance. Both the national and international sportscasters read it, and the range of the mean amplitude values is as follows:(4IMC2=0.0973 pascal, 3IMC2=0.0866 pascal, 2NMC2=0.0766 pascal, 1NMC2=0.0159pascal) in this order. The results assert that both international sports broadcasters read this utterance with a higher amplitude value than the national sportscasters. The higher energy utilised by sportscasters includes various intonation patterns and pitches to attract the listeners' attention due to the importance of the event they reported. The figures below show the variations in the mean amplitude values among national and international male sportscasters who read the / dawriiʔabṭaal ʔɔ:rubbaa/ utterance.

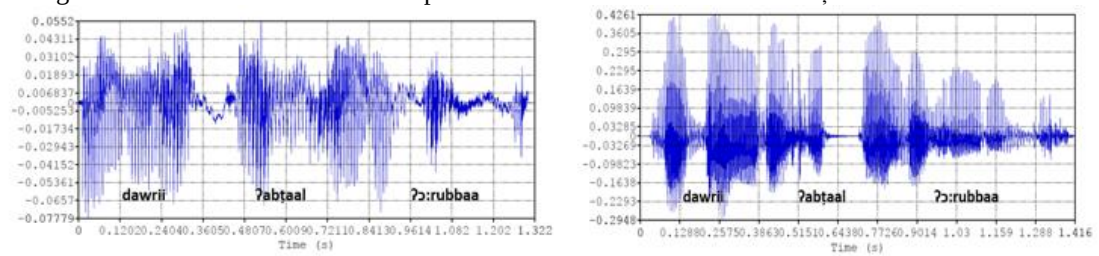

Fig. (16) The mean amplitude of the national male sportscasters' (1NM2/2NM2) utterances

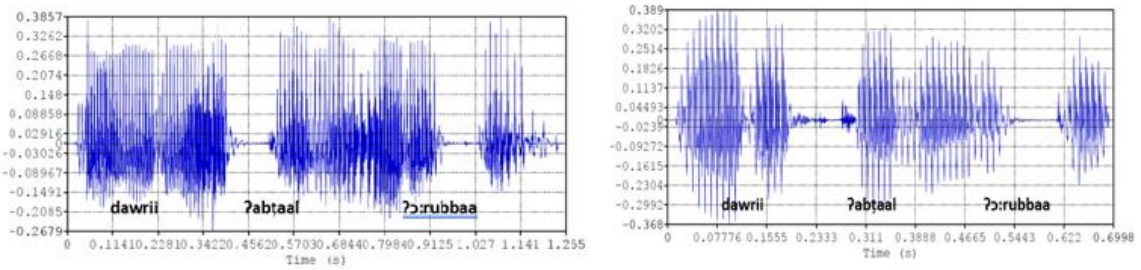

Fig. (17) The mean amplitude of the international male sportscasters (3IM2/41M2)

In contrast, the third utterance/**θalaaθatʔahdaafmuqaabillaaʃayʔ/**is uttered with a variation in the mean amplitude values by both national and international male sportscasters , and the results are as follows: (3IM3=0.0921pascal , 2NM3=0.0729pascal , 4IM3=0.0485pascal , 1NM3=0.0170pascal) in this order.The results reflect that the international male sportscaster of the BBC and the national male sportscaster of Al-Mirbadutilised a higher amplitude value than the other sportscasters . The figures below demonstrate the variation in the mean amplitude among national and international sportscasters .

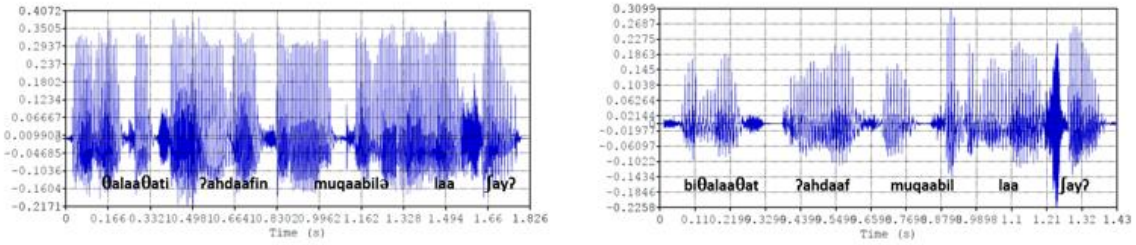

Fig. (18) The mean amplitude of the national male sportscasters (1NM3/2NM3)

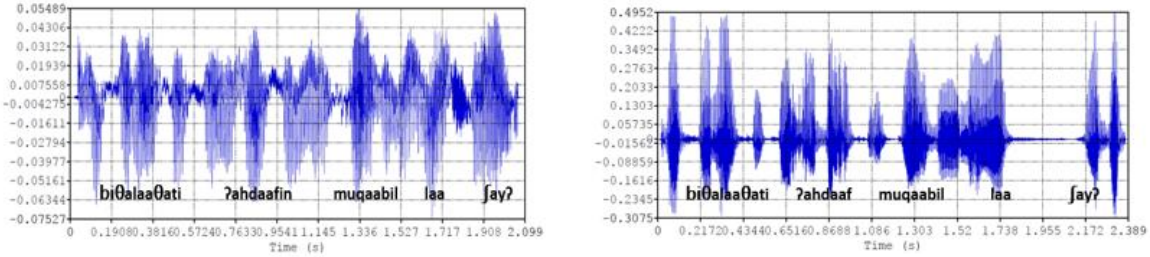

Fig. (19) The mean amplitude of the international male sportscasters (3IM3/41M3)

The same utterances are produced by the national and international female sportscasters and the results of the data analysis show that there is a significant variation in the mean amplitude values.The average amplitude reading values of the national and international female sportscasters in the production of **/ʔahlanbikum/** are found to be as follows: (1NF1=minimum> -0.1018 , maximum> 0.1268 , mean> 0.0351 , the total energy in air> 2.2501J/m^2) , (2NF1=minimum> -02983 , maximum> 0.3538, mean> 0.0497 , the total energy in air>) , (3IF1=minimum> -0.5845 , maximum> 0.4633, mean> 0.1456 , the total energy in air> 3.8976J/m^2), (4IF1=minimum> -0.4435 , maximum> 0.2832, mean> 0.0929 , the total energy in air>1.5524J/m^2). The mean amplitude values of the second utterance/**dawriiʔabṭaal ʔɔːrubbaa/** which is read by both the national and international female sportscasters groups are as follows: (1NF2=minimum> -0.0580, maximum> 0.0984 , mean 0.02020 , the total energy in air> 1.0697J/m^2), (2NF2=minimum> -0.2239 , maximum> 0.2286, mean> 0.0445 , the total energy in air> 7.7541J/m^2) , (3IF2=minimum> -0.2948 , maximum> 0.2208 , mean> 0.0615 , the total energy in air> 1.2500J/m^2), (4IF2=minimum> -0.7284 , maximum> 0.5894 , mean> 0.1127 , the total energy in air> 4.2518J/m^2). Furthermore , the average amplitude values of the third utterance **/θalaaθatʔahdaafmuqaabillaa ʃayʔ/** that is read by both female sportscasters groups , are as follows: (1NF3=minimum>-0.1024 , maximum>0.1194 , mean>0.0257, the total energy in air> 3.1916) , (2NF3= minimum>-0.2463 , maximum> 0.2050 , mean> 0.0515 , the total energy in air>1.4333J/m^2), (3IF3=minimum >-0.3743 , maximum >0.3450 , mean> 0.0732 , the total energy in air> 2.3448J/m^2), (4IF3= minimum> -0.3960 , maximum> 0.3223 , mean >0.0835 , the total energy in air >3.0777J/m^2), as the results are outlined in the following table .

Table (4) The mean amplitude of the national and international female sportscasters' utterances

Amplitude Reading Values (Pascal)	Sportscaster	Minimum amplitude	Maximum amplitude	Mean amplitude	The total energy in the air(J/m^2)
	1NF1	-0.1018	0.1268	0.0351	2.2501
	1NF2	-0.0580	0.0984	0.0202	1.0697
	1NF3	-0.1024	0.1194	0.0257	3.1916
	2NF1	-0.2983	0.3538	0.0497	4.2718
	2NF2	-0.2239	0.2286	0.0445	7.7041
	2NF3	-0.2463	0.2050	0.0515	1.4333

	3IF1	-0.5845	0.4633	0.1459	3.8976
	3IF2	-0.2948	0.2208	0.0615	1.2500
	3IF3	-0.3743	0.3450	0.0732	2.3448
	4IF1	-0.4435	0.2832	0.0929	1.5524
	4IF2	-0.7284	0.5894	0.1127	4.2518
	4IF3	-0.3960	0.3223	0.0835	3.0777

The results of the analysis reveal that the international female sportscaster of the BBC produced the /ʔahlanbikum / utterance with a greater amplitudevalue , followed by the international female sportscaster of the MCD, as follows(the BBC's female sportscaster = 0.1459pascal, MCD's female sportscaster=0.0929pascal), than the national female sportscasters, viz (Al-Mirbad's female sportscaster=0.0497Pascal, IMN's female sportscaster=0.0351pascal). The figures below show the variation in the mean amplitude values of the **/ʔahlanbikum/** utterance uttered by the national and international female sportscasters.

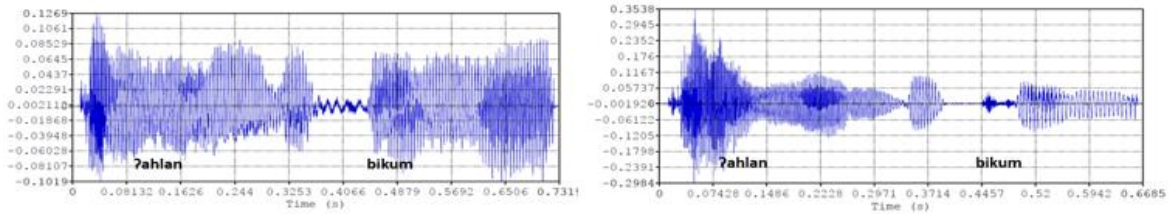

Fig. (20) The mean amplitude of the national female sportscasters (1NF1/2NF1)

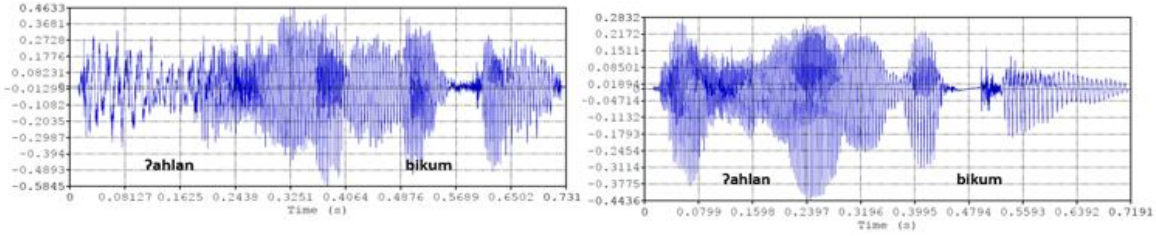

Fig. (21) The mean amplitude of the international female sportscasters (3IF1/4IF1)

Regarding the production of the second utterance/**dawriiʔabṭaal ʔɔ:rubbaa/,** the results assert that the international female sportscasters read it with greater amplitude values than the national female sportscasters, that is (the MCD's female sportscaster=0.1127, the BBC's female sportscaster=0.0615). Then, followed by the national female broadcasters (Al-Mirbad sportscaster=0.0445), and the IMN's female sportscaster who reads /**dawriiʔabṭaal ʔɔ:rubbaa/** with a low amplitude value (IMN's female sportscaster=0.0202)in comparison with her national counterpart sportscaster **.** The following figures display the variation of the mean amplitude values among the national and international female sportscasters in the production of the/ **dawriiʔabṭaal ʔɔ:rubbaa/** utterance .

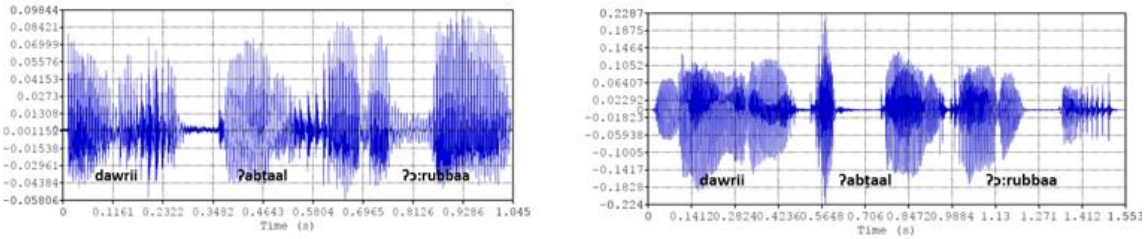

Fig. (22) The mean amplitude of the national female sportscasters (1NF2/2NF2)

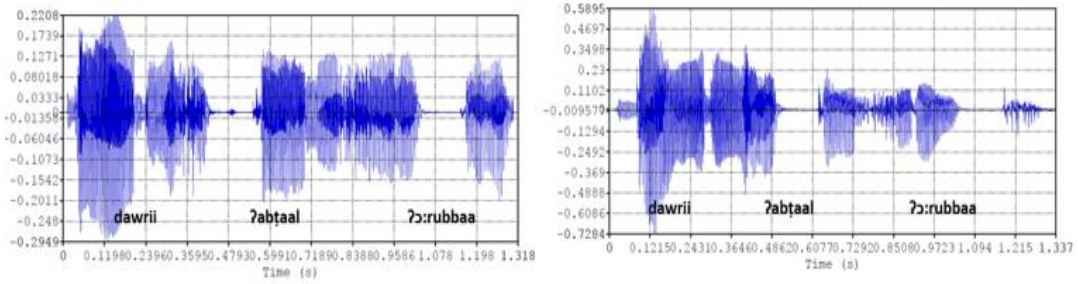

Fig. (23) The mean amplitude of the international female sportscasters (3IF2/4IF2)

The analysis results of the third utterance **/θalaaθatʔahdaafmuqaabillaa ʃayʔ/** reflect that it is uttered with a greater amplitude value by the international female sportscaster, viz (theMCD's female sportscaster=0.0835pascal and the BBC's female sportscaster=0.732pascal)respectively. Then , the national female sportscaster of Al-Mirbad produced it with a higher amplitude value ,namely (2NF3= 0.0515pascal) than her national counterpartsportscaster, who read it with a low amplitude, viz (1NF3= 0.0257pascal) than the other female sportscasters **.** The figures below exhibit the mean amplitude values of both the national and international female sportscasters who read the /θalaaθatʔahdaafmuqaabillaa ʃayʔ/ utterance.

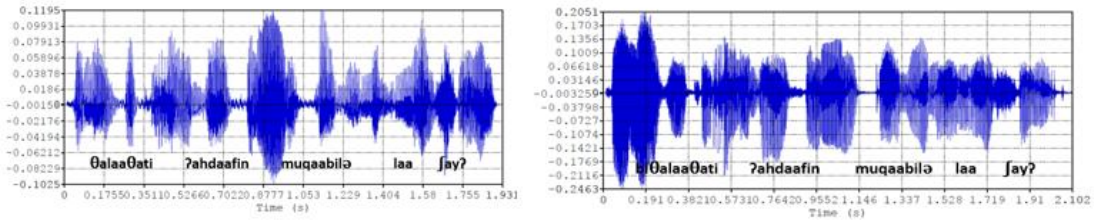

Fig. (24) The mean amplitude of the national female sportscasters (1NF3/2NF3)

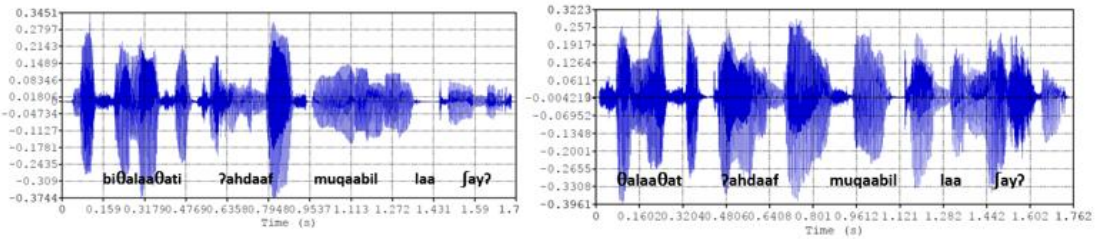

Fig. (25) The mean amplitude of the international female sportscasters (3IF3/4IF3)

News and social-programs presentation require some acoustic peculiarities that announcers have to utilize, such as a strong vocal effort in newscast production to express seriousness and a modulating vocal effort in social production to reflect a soft and quiet voice quality. On the other hand, broadcasters should present sportscasts with a high degree of energy. In other words, sportscasters should employ their acoustic peculiarities as a laser beam that reflects energy, enthusiasm, and entertainment that visualize the broadcasting message to the listeners.

5.3Intensity

Speakers canincrease their vocal efforts to produce a special voice quality that is suitable to the type and condition of discourse. Vocal intensity may increase due to the subglottal pressure that leads to the increased vibration of vocal folds adduction . The data results expose that there is a variation in the intensity values of the **/ ʔahlanbikum /** utterance that is uttered by the national and international male sportscasters as follows:(1NM1=65.49dB,2NM1=69.05dB, 3IM1=72.74dB, 4IM1=73.27dB). Both male sportscasters groups produced the intensity values of the second utterance **/dawriiʔabṭaal ʔɔ:rubbaa/**asfollows: (1NM2=58.05dB, 2NM2=71.67dB ,3IM2=72.74dB , 4IM2=73.74dB) . Furthermore, the results of the intensity reading values of the third utterance **/θalaaθatʔahdaafmuqaabillaa ʃayʔ/** are as follows: (1NM3= 58.61dB, 2NM3=71.24dB, 3IM3= 73.27dB, 4IM3=67.7dB) , respectively as in the table shown below.

Table(5) The mean intensity values of the national and international male sportscasters' utterances

Intensity Reading Values in dB	1NM1	1NM2	1NM3
	65.49	58.05	58.61
	2NM1	2NM2	2NM3

	69.05	71.67	71.24
	3IM1	3IM2	3IM3
	72.74	72.74	73.27
	4IM1	4IM2	4IM3
	73.27	73.74	67.7

The results of the analysis detect a noticeable contrast. The sportscasters' intensity values reveal that the international male sportscasters uttered **/ʔahlanbikum/** with a higher intensity , viz (the MCD's male sportscaster=73.27dB , the BBC's male sportscaster=72.74dB), followed by the national male sportscaster of Al-Mirbad (69.05dB), and the national sportscaster of IMN who produced it with a lower intensity value (65.49dB) than the other sportscasters. The figures below clarify the national and international male sportscasters' mean intensity values of the greeting phrase **/ʔahlanbikum/ .**

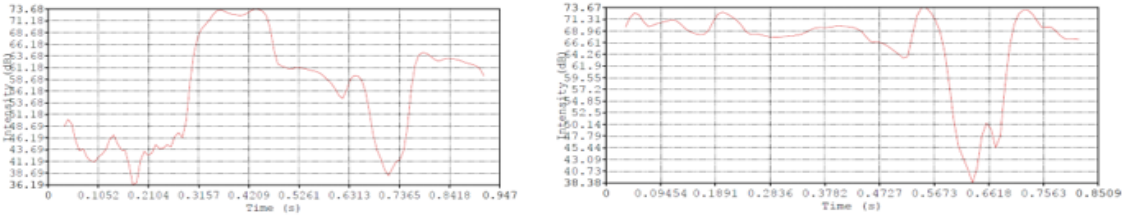

Fig. (26) The intensity values of (1NM1/2NM1) sportscasters' utterance

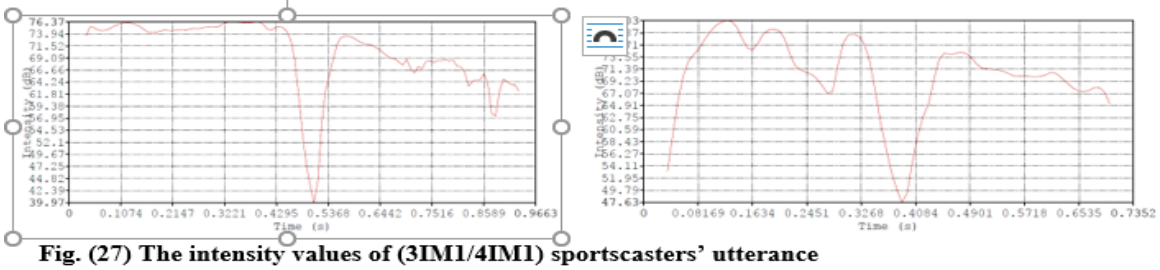

Fig. (27) The intensity values of (3IM1/4IM1) sportscasters' utterance

The results of the analysis show a remarkable contrast in the production of the second utterance **/dawriiʔabṭaal ʔɔ:rubbaa/** among national and international sportscasters. Both the BBC's and MCD's male sportscasters uttered it with an increased intensity value , followed by the national male sportscaster of Al-Mirbad , viz(4IM2=73.74dB , 3IM2=72.74dB , 2NM2=71.67dB) in this order. On the other hand, the other national male sportscaster of IMN read it with a decreased intensity, as (1NM2=58.05dB) .The figures below show the variation of the intensity values among the male sportscasters groups in the production of the **/dawriiʔabṭaal ʔɔ:rubbaa/** utterance.

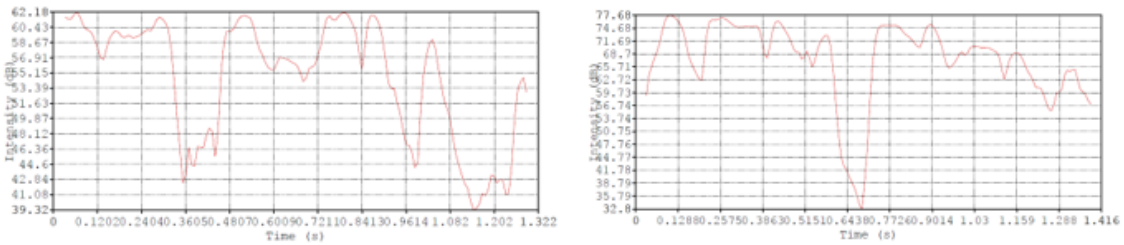

Fig. (28) The intensity values of (1NM2/2NM2) sportscasters' utterance

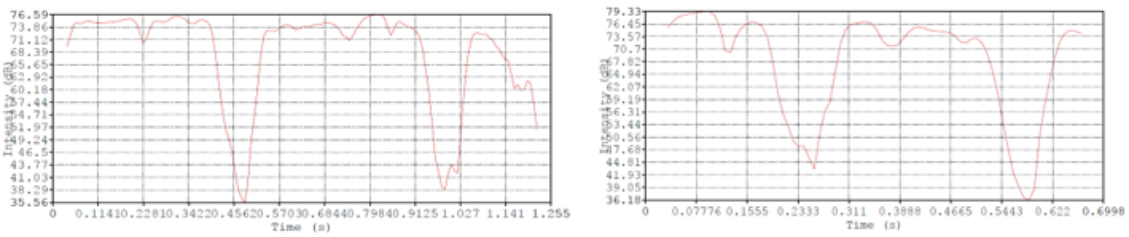

Fig. (29) The intensity values of (3IM2/4IM2) sportscasters' utterance

Moreover , the results expose a diversity in the intensity values of the third utterance **/θalaaθatʔahdaafmuqaabillaaʃayʔ/** that is produced by both national and international sportscasters . The international male sportscaster of the BBC and the national one of the Al-Mirbaduttered it with an increased intensity value(3IM3=73.27dB , 2NM3=71.24dB) in this order, followed by the other international sportscaster of the MCD who produced it with an increased intensity value, viz(67.7dB) than the first national male sportscaster of IMN, viz(1NM3=58.61) who produced it with a decreased intensity value. The figures below display the variation in the intensity values among the national and international sportscasters in the production of the **/θalaaθatʔahdaafmuqaabillaaʃayʔ/** utterance.

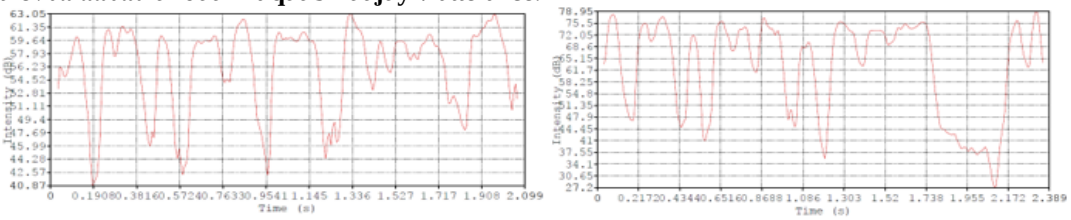

Fig. (30) The intensity values of (1NM3/2NM3) sportscasters' utterance

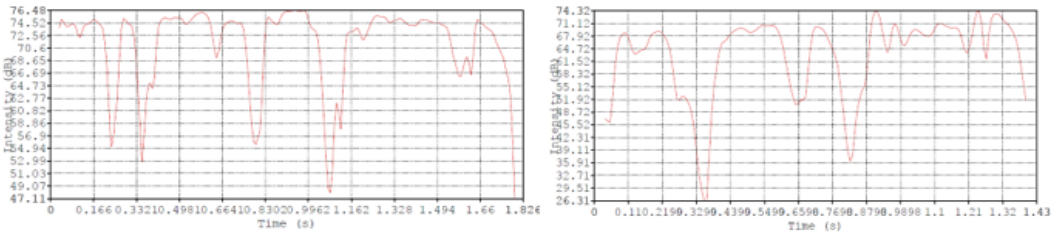

Fig. (31) The intensity values of (3IM3/4IM3) sportscasters' utterance

The same three utterances are produced by the national and international female sportscasters who present sports news . The intensity reading values of the first utterance **/ʔahlanbikum/** are as follows:(1NF1=64.89dB , 2NF1=68.05dB , 3IF1= 77.27dB , 4IF1=73.34dB), respectively. The second utterance **/dawriiʔabṭaal ʔɔ:rubbaa/** which is read by both female sportscasters groups has the following intensity values:(1NF2=60.11dB, 2NF2=66.96dB , 3IF2=69.77dB , 4IF2=75.02dB) in this order. Furthermore, the intensity values of the third utterance/**θalaaθatʔahdaafmuqaabillaa ʃayʔ/** are as follows: (1NF3=62.18dB , 2NF3=68.34dB , 3IF3=71.27dB , 4IF3=72.42dB), as it is exhibited in the table given below.

Table(6) The mean intensity values of the national and international female sportscasters' utterances

Intensity Reading Values in dB	1NF1	1NF2	1NF3
	64.89	60.11	62.18
	2NF1	2NF2	2NF3
	68.05	66.96	68.34
	3IF1	3IF2	3IF3
	77.27	69.77	71.27
	4IF1	4IF2	4IF3
	73.34	75.02	72.42

The results analysis reveal that the first utterance **/ʔahlanbikum/** is produced with an increased intensity value by both the international female sportscasters , viz (the BBC's female sportscaster=77.27 and the MCD's

female sportscaster=73.34) , as opposed to the national female sportscasters who uttered it with decreased intensity values , namely (the female sportscaster of Al-Mirbad =68.05 , and the female sportscaster of IMN = 64.89) . The figures below demonstrate the mean intensity values of both the national and international female sportscasters in producing the first utterance **/ʔahlanbikum/.**

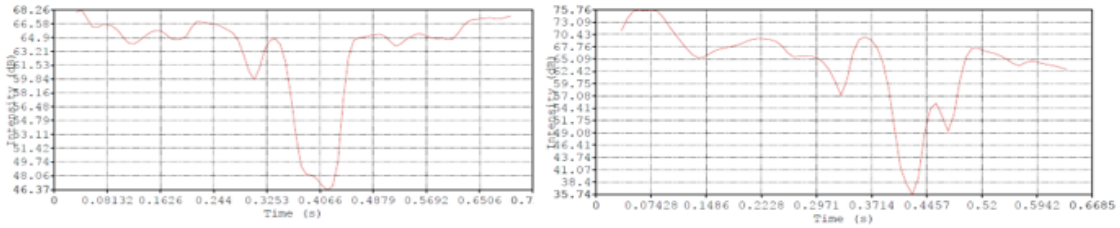

Fig. (32) The intensity values of (1NF1/2NF1) sportscasters' utterance

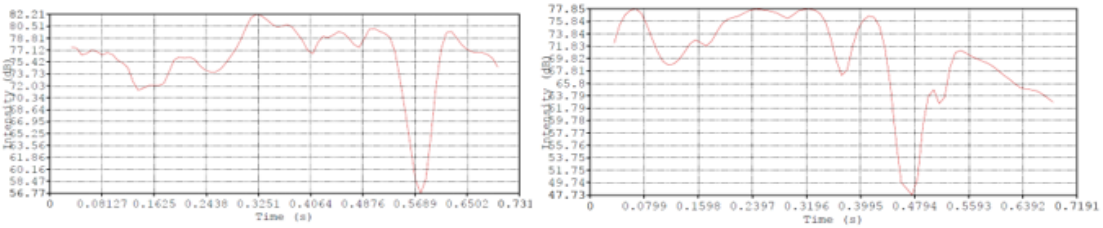

Fig. (33) The intensity values of (3IF1/4IF2) sportscasters' utterance

On the other hand , the data results expose a diversity in the intensity reading values of the second utterance **/dawriiʔabṭaal ʔɔ:rubbaa/** among the female sportscasters of both groups. This utterance is produced with an increased intensity value by the international female sportscaster of the MCD, viz (4IF2=75.02dB). In contrast to the others, the BBC's female sportscaster read it with a less intensity value (3IF2=69.77dB) compared to her international counterpart sportscaster . Both the national female sportscasters uttered it with decreased intensity values in comparison to the international female sportscasters , namely (2NF2=66.96dB , and 1NF2=60.11 dB). The figures below show the differences in the intensity values of both the national and international female sportscaster in reading **/dawriiʔabṭaal ʔɔ:rubbaa/** utterance.

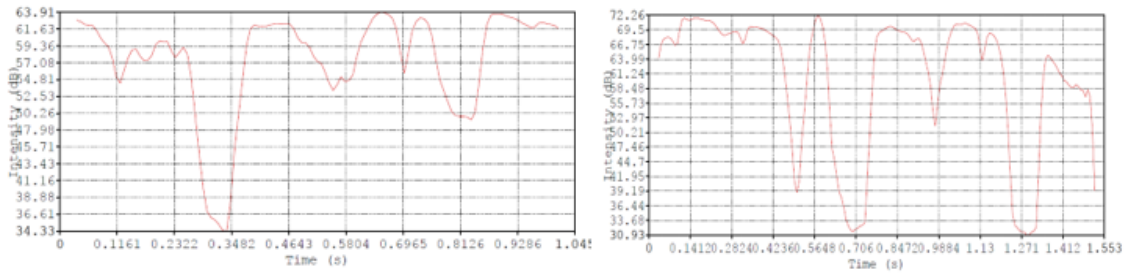

Fig. (34) The intensity values of (1NF2/2NF2) sportscasters' utterance

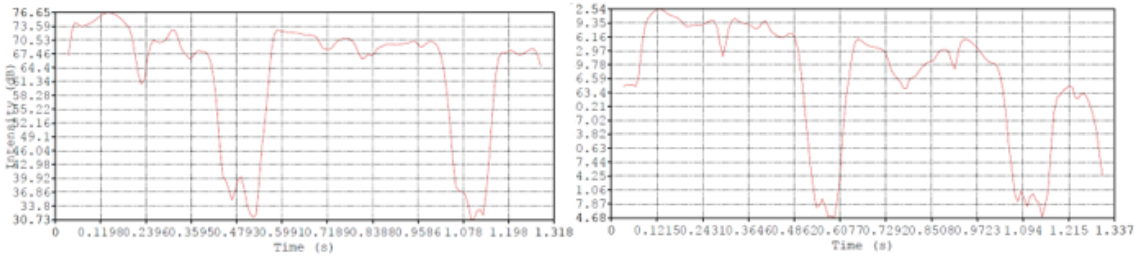

Fig. (35) The intensity values of (3IF2/4IF2) sportscasters' utterance

In addition, the results of the data analysis exhibit that the third utterance **/θalaaθatʔahdaafmuqaabillaaʃayʔ/** said by the female sportscasters of both groups. It is read with higher intensity values by the international female sportscasters, namely (the MCD's sportscaster= 72.42dB and the BBC's sportscaster=71.27dB), contrast to the other national female sportscasters. They read it with low-intensity values, viz(Al-Mirbad's sportscaster=68.34dB and IMN's sportscaster=62.18dB). The following figures show the differences in the

intensity values of the **/θalaaθatʔahdaafmuqaabillaa ʃayʔ/** utterance among the national and international female sportscasters.

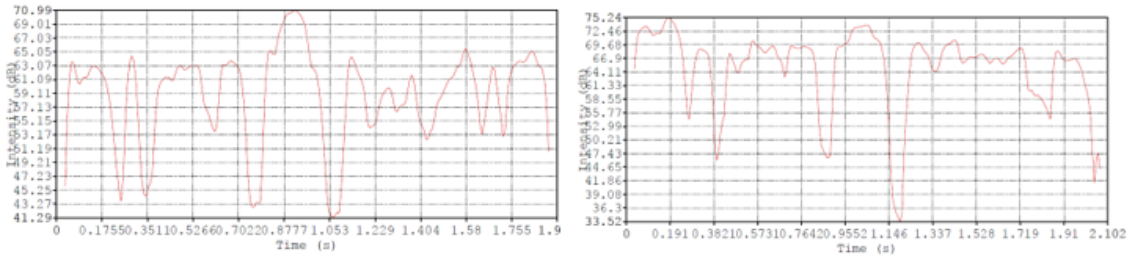

Fig. (36) The intensity values of (1NF3/2NF3) sportscasters' utterance

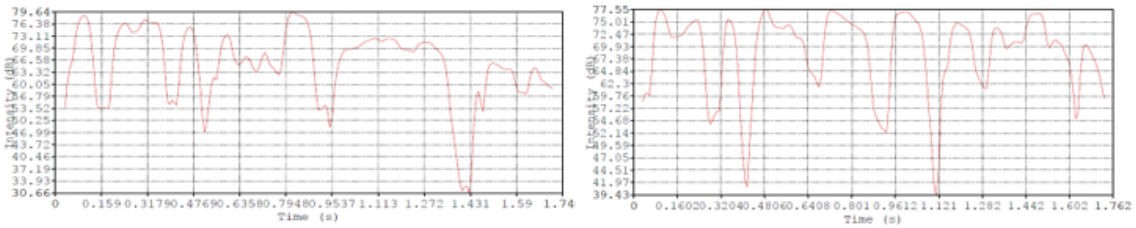

Fig. (37) The intensity values of (3IF3/4IF3) sportscasters' utterance

The results above reveal a remarkable variation in the intensity values in producing the three corresponding utterances among male/female sportscasters of both groups. The greeting utterance is produced with increased intensity values by the international male sportscasters compared to the national male sportscasters; whereas the international female sportscasters uttered the same utterance with increased intensity values compared to their male counterparts. The results show approximate intensity values among national male/female sportscasters in the production of the first utterance**/ʔahlanbikum/**. Furthermore, the results expose that the international male sportscaster of BBC and the national one of Al-mirbad read **/dawriiʔabṭaal ʔɔ:rubbaa/** with a highintensity value compared to the national male sportscaster of (IMN), and the national and international female sportscasters as well, with the exception of the international female of (MCD) who said it with a higher intensity value than the other male and female sportscasters. In addition, the third utterance **/θalaaθatʔahdaafmuqaabillaaʃayʔ/** is produced with increased intensity values by the (BBC's male broadcaster and Al-Mirbad's) compared to the other male/ female sportscasters. Also, there is an exception ,namely the international female sportscaster of the(MCD) read it with an increased intensity value compared to the international male sportscaster.

4.3 Duration of Time

The variance in speech production duration concerning broadcasters' voice is a powerful influential tool delivering the intended message. When we listen to a voice, we do not receive just words and sentences. Listeners usually focus on the speaker's manner of delivering the intended message because each individual has a unique manner in speech production that reflects her/his emotional state or personality. There is a diversity among broadcasters' speech rate (slow to normal, medium, or fast). The data analysis results exhibit the total duration of each utterance read by the national and international sportscasters who produced sports news .The total duration values of the first utterance **/ʔahlanbikum/** are found to be (1NM1=0.926979msec. , 2NM1=0.850884 msec , 3IM1=0.966304msec. , 4IM1=0.740590msec.) . Moreover , the total duration values of the second utterance **/dawriiʔabṭaal ʔɔ:rubbaa/** are as follows:(1NM2=1.327625 sec. , 2NM2=1.419456sec. , 3IM2= 1.254649sec. , 4IM2=0.699796msec.) . On the other hand , the total duration values of the third utterance **/θalaaθatʔahdaafmuqaabillaa ʃayʔ/** are calculated as follows:(1NM3=2.078979sec. , 2NM3=2.389093sec. , 3IM3=1.826349sec. , 4IM3=1.429660sec.), respectively as shown in the table displayed below.

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

Broadcaster	1NM1	1NM2	1NM3
Total duration values /sec.	0.946979	1.327625	2.078979
Broadcaster	2NM1	2NM2	2NM3

Total duration values/sec.	0.850884	1.419456	2.389093
Broadcaster	3IM1	3IM2	3IM3
Total duration values/sec.	0.966304	1.254649	1.826349
Broadcaster	4IM1	4IM2	4IM3
Total duration values/sec.	0.740590	0.699796	1.429660

The above results show a remarkable variation in the average duration of the national and international male sportscaster's utterances. The differences in the utterances' duration values indicate the broadcasters' speech rate in delivering an understandable message to the listeners. The first utterance **/ʔahlanbikum/** is produced with a medium speech rate by the international male sportscaster of MCD, viz(4IM1=0.740590msec.), followed by the national male sportscaster of Al-Mirbad who uttered it with a normal to medium speech rate which is (2NM1=0.850884msec.). In contrast, the international sportscaster of the BBC and the national sportscaster of IMN produced it with a normal speech rate, namely(3IM1=0.966304msec. 1NM1=0.946979msec.).
The average duration of the second utterance **/dawriiʔabṭaal ʔɔ:rubbaa/** is said with a fast speech rate by the international male sportscaster of MCD , viz (4IM2=0.699796 msec.). In contrast, it is uttered with a medium speech rate by the BBC's sportscaster, that is (3IM2=1.254649sec.). On the other hand, it is produced with a normal speech rate by the national sportscasters, namely (2NM2=1.419456sec. and 1NM2=1.327625sec.). Regarding the third utterance **/θalaaθatʔahdaafmuqaabillaaʃayʔ/,** it is produced with a slow to normal speech rate by both national male sportscasters who are (2NM3=2.389093sec. and 1NM3=2.078979sec.), compared to the international sportscasters who said it with a normal to medium speech rate, namely:(3IM3=1.826349sec. and 4IM3=1.429660sec.)
The national and international female sportscasters produced the same three utterances . The total duration values of the greeting phrase **/ʔahlanbikum/** utterance that both groups of female sportscasters uttered it, are as follows :(1NF1=0.730292msec.,2NF1=0.668526msec. , 3IF1=0.731474msec., 4IF1=0.719070msec.). The average duration of the second utterance **/dawriiʔabṭaal ʔɔ:rubbaa/** is found to be (1NF2=1.043229sec. , 2NF2=1.553175sec. , 3IF2=1.318073sec. , 4IF2=1.336939sec.) , and that for the third utterance **/θalaaθatʔahdaafmuqaabillaa ʃayʔ/** is measured to be as follows: (1NF3=1.930979sec. , 2NF3=2.101542sec., 3IF3=1.748458sec. , 4IF3=1.762154sec.) , as given in the table below.

Table(8) The total duration values of the national and international female sportscasters' utterances

Broadcaster	1NF1	1NF2	1NF3
Total duration values /sec.	0.730292	1.043229	1.930979
Broadcaster	2NF1	2NF2	2NF3
Total duration values/sec.	0.668526	1.553175	2.101542
Broadcaster	3IF1	3IF2	3IF3
Total duration values/sec.	0.731474	1.318073	1.748458
Broadcaster	4IF1	4IF2	4IF3
Total duration values/sec.	0.719070	1.336939	1.762154

The results expose the average duration values of the national and international female sportscasters in sports news production. The total duration values of the first utterance **/ʔahlanbikum/** show that it is uttered with a medium speech rate by the international female sportscasters of the BBC, MCD, and the national female sportscaster of IMN, that is (3IF1=0.731474msec., 1NF1=0.730292msce. , 4IF1=0.719070msec.). In contrast, the other national female sportscaster of Al-Mirbad radio station uttered it with a fast speech rate compared to the other sportscasters, viz (2NF1=0.668526msec.).
The results also display that the average duration values of the second utterance **/dawriiʔabṭaal ʔɔ:rubbaa/**are produced with a fast speech rate by the national female sportscaster of IMN compared to the other female sportscasters, that is (1NF2=1.043229 sec.); whereas the other national sportscaster of Al-Mirbaduttered it with a normal speech rate, namely (2NF2=1.553175 sec.), both international sportscasters produced it with a medium speech rate (4IF2=1.336939sec. and 3IF2=1.318073sec.) . The results of the duration of the third

utterance **/θalaaθat?ahdaafmuqaabillaa ʃay?/** denote that the national female sportscasters of Al-Mirbad and IMN's sportscaster said it with a normal speech rate compared to the others sportscasters, that is to say (2NF3=2.101542 sec. and 1NF3=1.930979sec.). On the other hand, the international female sportscasters of the BBC and MCD produced it with a medium to fast speech rate, that is (3IF3=1.748458sec. and 4IF3=1.762154sec.).

Conclusions

The above discussion of the data analysis prove that there are variations in the acoustic properties produced by the national and international male/female broadcasters in the production of sportscast's utterances. The researcher came up with the following conclusions:

1. The results verified a variation in the production of the fundamental frequency among national and international sportscasters. Also, the results proved that the / **dawrii?abṭaal ?ɔ:rubbaa/** utterance was uttered with a similar F0 by the national sportscaster of Al-Mirbad and the international one of MCD . The results confirmed a variation in the production of the F0 between male and female sportscasters. Female sportscasters utilised a higher F0 in the production of the / **dawrii?abṭaal ?ɔ:rubbaa/** utterance than the males , excluding the international male sportscaster of MCD who uttered it with a higher F0 than his female counterpart. Furthermore, female sportscasters uttered the / **θalaaθat?ahdaafmuqaabillaa ʃay?/** with a higher F0 than male sportscasters.
2. The results verified different amplitude values between the sportscasters of the same group and with the other group. Moreover, the results have proven the variation of amplitude values between male and female sportscasters of national and international groups.
3. The results confirmed the variation in the intensity values between the national and international female sportscasters. The international female sportscasters uttered the three sportscast's utterances with increased intensity values as opposed to the national female sportscasters. A further result has been verified through this study: there is a variation in the intensity values in the production of sportscast's utterances due to gender variety. The results revealed the differences in the intensity values among the national and international male / female sportscasters.
4. The results exposed a remarkable variation in the duration of sportscast's utterances among national and international male and female sportscasters. The variation in the duration of sportscast's utterances proved that male sportscasters uttered some utterances with a fast speech rate than female sportscasters, viz / θalaaθat?ahdaafmuqaabillaaʃay?/ , the same utterance is produced with a similar duration by the national female sportscasters with a normal speech rate compared to the international female sportscasters who uttered it with medium to fast speech rate.
5. The results show a convergence in the measurement of the acoustic properties of national and international announcers. This similarity in some acoustic properties indicates the opportunity of the national broadcasting voice to evolve into an international broadcasting voice with the availability of modern technological equipment and with little broadcast training to rise to the level of international broadcasting.

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