

A Contrastive-Acoustic Study of Arabic National and International Broadcasted Social-Program Speech

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ABSTRACT

The study aims to determine the variations in the acoustic properties, viz: the fundamental frequency, amplitude, intensity, and duration of time of social program's utterances that are presented by the national and international announcers, taking into consideration spokesperson genders (male/female). It analyzes the acoustic parameters of Arabic national and international broadcasting speech in audio media. Twenty-four announcers produce the utterances. The researcher collects the data of the study from 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 the national male/female broadcasters produced the social-program's utterances with a remarkable variation of the acoustic properties, in contrast to the international male/female broadcasters'. 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 announcers with divers fundamental frequency, amplitude, intensity, and duration, in contrast with the other international male/female newscasters.

Keywords

Acoustic Properties, Broadcasting Speech, Fundamental Frequency, Amplitude, Intensity, Duration of Time.

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;

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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.

No two people articulate the same thing similarly. Various factors, that is related to the geographical and social region of the speaker 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 sound 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 pitch range, and the voice quality of speech sounds. The present study focuses on investigating the discrimination of the acoustic properties in social speech production of the national and international Arabic broadcasting speech.

Acoustic Properties of Sound Waves

Fundamental Frequency

Frequency is a technical term that refers to the number of cycles. 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) indicate that the typical fundamental frequency of the voice in speech is 120Hz for men and 210Hz for women. The mean values of F_0 may vary slightly because of age. The important feature of laryngeal activity during the oral speech is the fundamental frequency of the vocal folds 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 utilize a higher range while men use a lower range than women who use an intermediate-range (Ducote, 1983:1). The central tendency of the measurement of the fundamental frequency in adults has been discussed by Weaver (1924), Cowan (1936); Mysak (1959); McGlone and Hollien (1963); Hollien and Shipp (1972); Linke (1973). The results of these studies affirm that there is a converse relationship between the average

fundamental frequency and age, which means that the fundamental frequency decreases when age advances. Linke (1973, as cited in Pinto and Hollien, 1982: 368) shows in his experimental study of adult females' voices that they exhibited a mean of speaking fundamental frequency (SFF) of 200Hz. Linke indicates that these "females were speaking at lower levels than had been previously assumed", and maybe "lower than would seem to be advisable for the most effective employment of voices in speech", as cited in Pinto and Hollien (1982:368). Moreover, Linke (1973) points out to "pressures" that may play a role in lowering the speaking fundamental frequency, this can reflect female personalities from radio presentations, stage presentations and screen presentations and may support the description of females' speech as being "low pitched" speech, as cited in Pinto and Hollien (1982:368). The present study is concerned with the measurement of the variations in the fundamental frequency that may occur because of gender differences, the type of text or discourse broadcasted, and the emotional state of the speaker.

Amplitude and Intensity

Amplitude is 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 correlates with the acoustic intensity of a sound (Trask, 1996:211). The present study aims to examine the degree of displacement of air particles when broadcasters produce their speech. Speakers typically modify their voices according to the situations and conditions they are in; for example, a broadcaster who produces a newscast or a sportscast that is combined with music, he/she in such a noisy condition must increase the vocal effort. This situation is known as Lombard Speech (Bosker & Cook, 2018). Otherwise, broadcasters in quiet conditions have to moderate their folds effort in speech production. Speakers increase their vocal effort in particular situations in such a noisy environment; therefore, the present study intends to explore the degree of the broadcasters' control of their vocal output. Zhang (2016: 2628) mentions that when

an individual is asked to produce speech with intensity, he/she moves from a soft to loud voice and initially starts with a slightly breathy voice with a relatively open glottis. From this position, the vocal intensity may increase by increasing either the subglottal pressure, which increases vibration amplitude or vocal fold adduction.

Duration of Time

The duration of a speech sound is the total time that is needed to produce that speech sound. The period of time can be calculated and determined, but the significant time parameter is not absolute but rather relative (Al-Ani, 1970: 75). Klatt (1979) remarks that if a large variation in duration predictably occurs than the observable difference for the segmental duration, hence this variation may convey useful information from the speaker to the listener. The temporal pattern of acoustic effects is determined by the sound production and sound transmission properties of the larynx and the vocal nasal tract. The durations of individual segments vary significantly from these ranges due to the systemic effects of the phonetic and syntactic contexts. Klatt(1975:133) observes that the mediate duration of a stressed vowel in connected speech discourse is 132 ms, and the mediate duration of unstressed vowels, involving schwa is 70 ms. Both averages are shorter than the duration of vowels in words in isolated utterances. Coker, Umeda and Browman (1973, as cited in Klatt, 1973:130) contend that the segmental duration of a new word which is used for the first time is the longest in a connected speech. Segmental duration also relies on the speaker's emotional state and the speaking rate, which s/he adopts. A number of factors can influence an utterance's durational features, such as that is described by Williams and Stevens (1972:1239) when they observe the impact of the distribution of the respiratory pattern in anxiety states. An increase in respiration average results in an increase in the subglottal pressure throughout the speech. This subglottal pressure causes a higher fundamental frequency over voiced sounds in speech. In turn, the increased respiration average leads to shorter durations of speech between

breaths, with a consequent influence on the basic duration of speech patterns. This can be described as an extralinguistic factor; it reflects the effect of psychological and physical states of the speakers on duration.

Another factor is the discourse level which is illustrated by Lehiste (1975, as cited in Klatt1976:1210). She indicates that the variations that may occur to segmental durations can be due to the structure or content of utterances of a discourse. Lehiste (1975) notices that the last sentence in the reading of a paragraph tends to be longer than when it is in paragraph first-position. Emphatic or contrastive stress is considered as another factor that can affect the duration. Coker, Umeda and Browman (1973, as cited in Klatt, 1976:1210) declare that emphatic stress is very regular in English conversations and is used to focus on new information in an utterance and that results in an increase in the duration of a word by 10% - 20% or more.

Klatt(1975: 130) refers to the syntactic factor in the sense that the position of a syllable or syllables at the end of an utterance affect(s) the durational features of that utterance. The syllable duration at the end of an utterance increases by about 60-200msec and this duration effect is called *prepausal lengthening*.

The relative duration of speech production depends on the individual's speech rate; how fast he/she speaks. Speech rates are grouped into categories as (fast-slow, fast-neutral – slow, medium – fast-slow) (Gibbon et al., 2014: 64). The present study aims to measure the duration of time of the broadcasters' social speech and show the contrast between the two groups, National and International announcers.

The Acoustic Model of Speech Production (The Aerodynamic -Myoelastic Theory)

An acceptable theory of vocal folds vibration is the aerodynamic – myoelastic theory (Laver, 1980:95). This theory consists of two components and this is clear from its name. The first component is ‘ aerodynamic ‘ Van Den Berg (1958b) ; as cited in (Laver, 1980 : 96) and Gick, Wilson and Derrick (2013 : 81) show that the

tension in the vocal folds is not the only influential element of glottal vibration, that is to say the characteristic behavior of airflow through constrictions plays an essential role, especially in closing the glottis. 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) (Fant, 1960: 266), as cited in (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, causes the vocal folds to be closed, and then allows them to separate. The lower part of the vocal folds separates before the upper parts. 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.

Broadcasting Speech

The primary resource for our communication is via voice, but it is considered a crucial weapon for a broadcaster who works in audio or audiovisual media. The 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 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. 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 comprises, 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 ; the 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 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 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. The 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 of this, nonprofessional speakers articulate with little resonance because they do not open their mouths enough (Rodero, et al, 2017: 3).

Gender Variation in Speech Production

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 at the midst 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 is unblocked during the vocal folds' opening and closing 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. Breathly 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. Munson and Babel, (2019: 504) state that breathly 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 breathly voice quality.

Acoustic Analysis of the Data

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 are concerned with social-program 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 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 MonteCarlo Doualiya- 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 speech, 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 announcers' speech : 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.

The Acoustic Analysis of the Social Program Utterances

The Range of the Fundamental Frequency(F0)

The mean fundamental frequency(F0) values are calculated for each broadcaster's utterances who produces a social program. The fundamental frequency is measured for three corresponding utterances produced by national and international announcers of social programs. The utterances include a greeting phrase /ʔ ahlan bikum/ أهلاً بكم "Welcome", a "thank you" phrase addressing the audience /ʃ ukran ʒ aziilan lakum / شكراً جزيلاً لكم /ʃ ukran ʒ aziilan lakə / شكراً جزيلاً لك, and a global phrase which is announced by all social program announcers both national and international which is /wasaaʔ ilil tawaaʃ il il ʔ iʒ timaaʔ i/ وسائل التواصل الاجتماعي. The results confirm that the national announcer's mean fundamental frequency for the first utterance is (1NM1=670.9 Hz). The second utterance has a fundamental frequency (1NM2=434Hz), whereas the third utterance has a fundamental frequency (1NM3= 552.4Hz). The second national announcer's result analysis displays that the mean fundamental frequency produced by the male announcer for the first utterance is as follows (2NM1=730.2Hz), the second utterance has a fundamental frequency of (2NM2= 493.2Hz). In contrast, the third utterance has a fundamental frequency of (2NM3=611.7Hz). On the other hand, the

fundamental frequency which is used by the international male broadcaster, the BBC's male presenter, has different values. The results prove that the mean fundamental frequency produced by the international male announcer in uttering the three utterances is as follows: (3IM1=552.4Hz, 3IM2=374.7Hz, 3IM3=552.4Hz), respectively. The other international radio station results exhibit that the mean fundamental frequency of the MCD's male announcer in the three utterances is: (4IM1=789.4 Hz, 4IM2= 552.4Hz, 4IM3=611.7Hz), as is shown in the table below.

F0 Measuring (Hz)		
1NM1	1NM2	1NM3
670.9	434	552.4
2NM1	2NM2	2NM3
730.2	493.2	611.7
3IM1	3IM2	3IM3
552.4	374.7	552.4
4IM1	4IM2	4IM3
789.4	552.4	611.7

Table 1. The mean fundamental frequency (F0) values of the national and international male announcers social- program's utterances

The figures below clarify the mean fundamental frequency of the national and international announcers social-program's utterances.

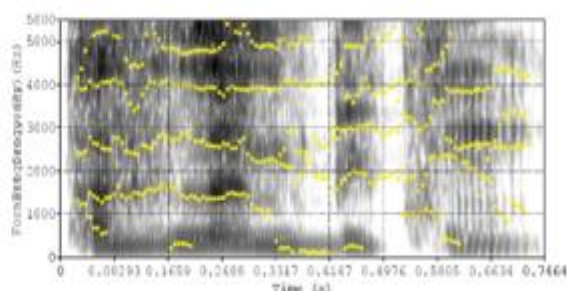
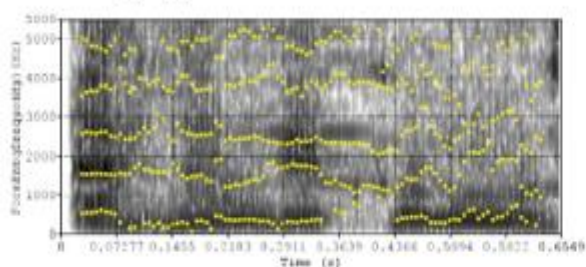


Fig.(1) The mean fundamental frequency of(1NM1/2NM1) /'ahlan bikum/ utterance

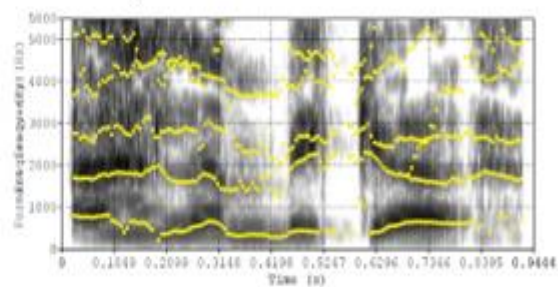
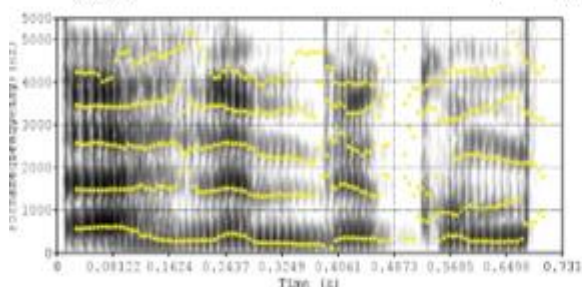


Fig.(2) The mean fundamental frequency of(3IM1/4IM1) /'ahlan bikum/ utterance

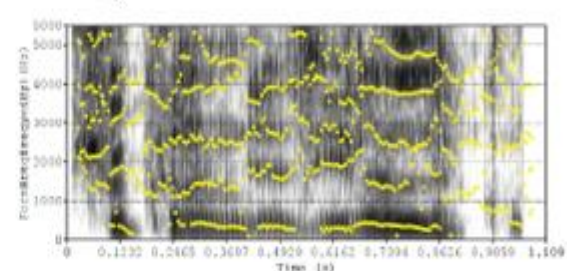
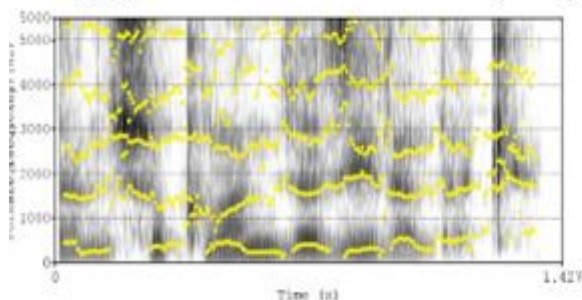
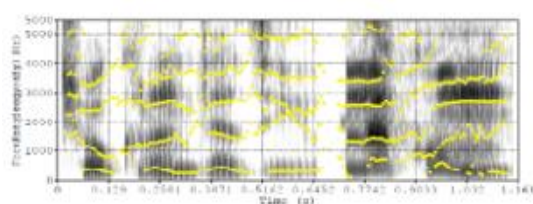
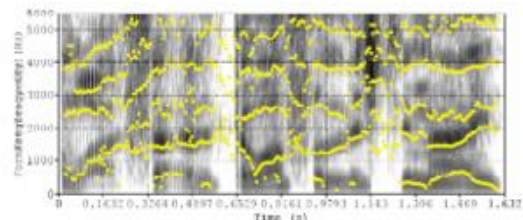
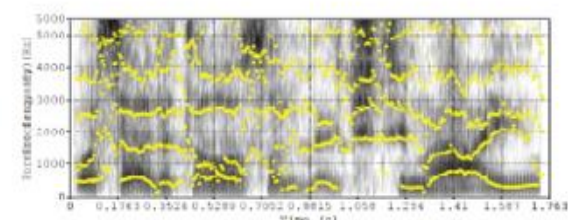
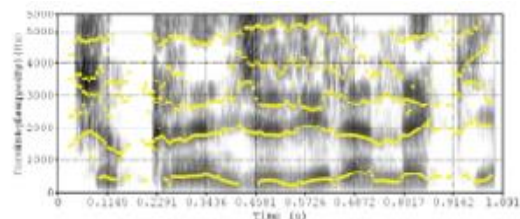


Fig.(3) The mean fundamental frequency of(1NM2/2NM2) /'ukran zaziilan/ utterance



Fig(4) The mean fundamental frequency of(3IM2/4IM2) /Jukran ʒaziilan/ utterance



Fig(5) The mean fundamental frequency of(1NM3/2NM3) /wasaaʔilil tawaaʃilil ʔiztimaaʔi /

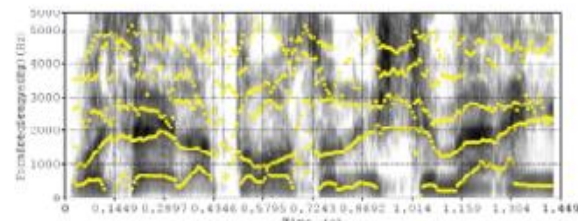
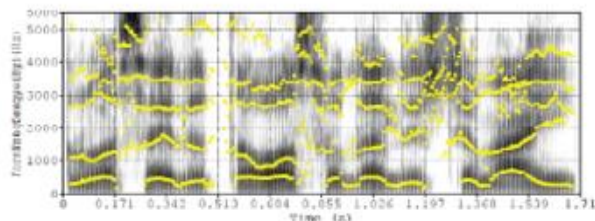


Fig.(6) The mean fundamental frequency of(3IM3/4IM3) /wasaaʔilil tawaaʃilil ʔiztimaaʔi /

The results of the data analysis show that the average of the fundamental frequency reading values related to the national female announcers who produced the same three utterances of a social program are as follows: (1NF1=434Hz), (1NF2=552.4Hz) and (1NF3=611.7 Hz) in this order. The results analysis of the second national radio display the fundamental frequency of the three utterances as follows: (2NF1=493.2Hz), (2NF2=493.2Hz) and (2NF3= 552.4Hz), respectively. In contrast, the results reveal that the international female announcers' fundamental frequency values who produced the same utterances of a social program are as follows: in the case of the first international radio station (BBC's female presenter), the fundamental frequency is read as (3IF1= 670.9Hz), (3IF2=493.2 Hz), and (3IF3= 493.2Hz) in this order. Furthermore, the fundamental frequency in the case of the other international radio station is found to be (4IF1=611.7Hz), (4IF2=552.4Hz),

and (4IF3=493.2Hz), respectively. These results are summarized in the table below.

Table 2. The mean fundamental frequency (F0) values of the national and international female announcers social program's utterances

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

The following figures show the spectrograms of both the national and international female announcers who produced social program's utterances.

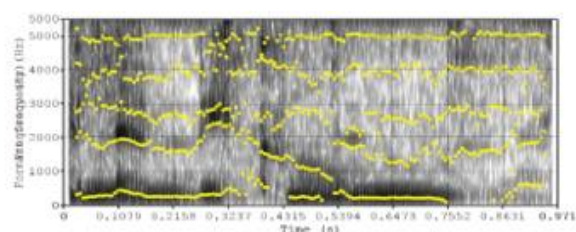


Fig.(7) The mean fundamental frequency of(1NF1/2NF1) /ʔahlan bikum/ utterance

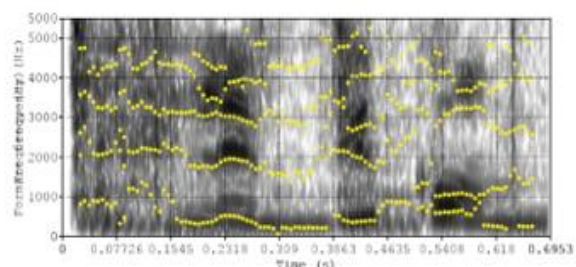
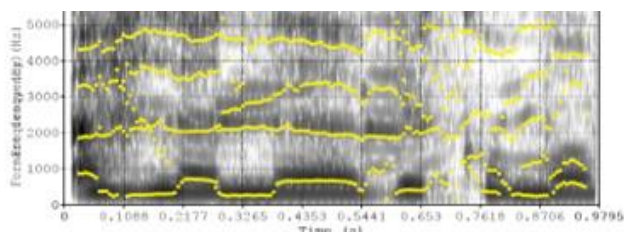


Fig.(8) The mean fundamental frequency of(3IF1/4IF1) /ʔahlan bikum/ utterance

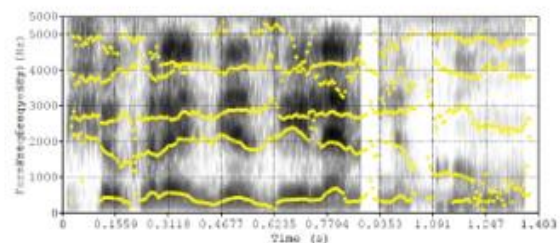
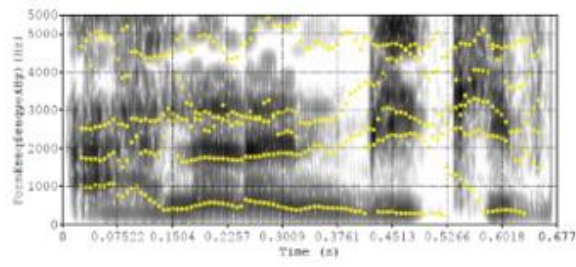


Fig.(9) The mean fundamental frequency of(1NF2/2NF2) /ʔukran ʔaziilan/ utterance

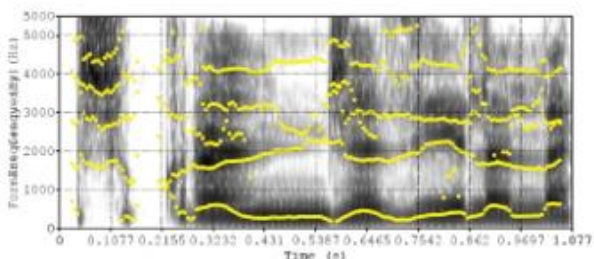
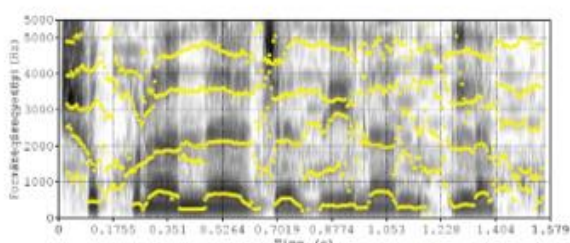


Fig.(10)The mean fundamental frequency of(3IF2/4IF2) /ʔukran ʔaziilan/ utterance

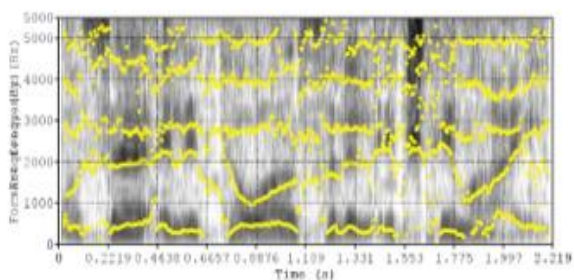
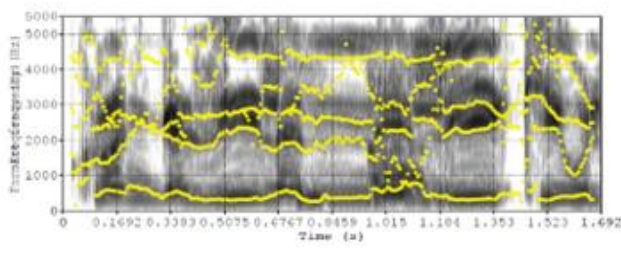
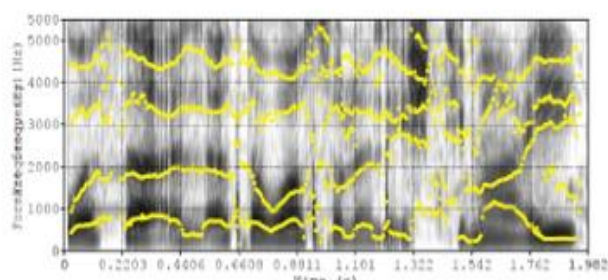


Fig.(11) The mean fundamental frequency of(1NF3/2NF3) /wasaaʔilil tawaaʔilil ʔiztimaaʔii /



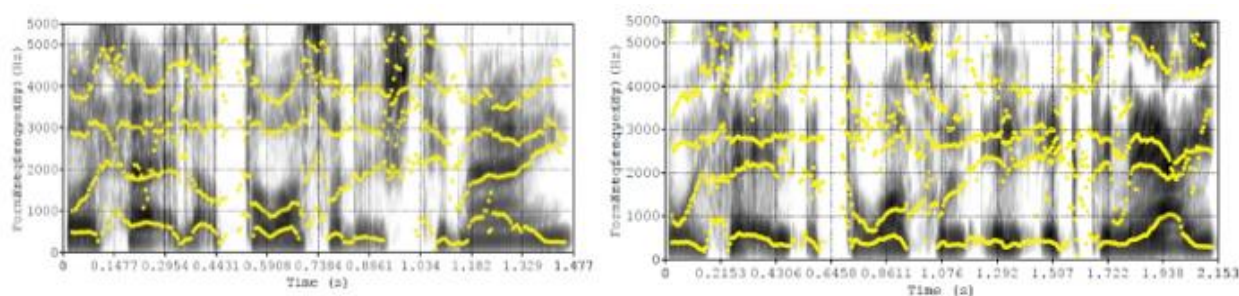


Fig.(12) The mean fundamental frequency of(3IF3/4IF3) /wasaaʔilil tawaaʃilil ʔiztimaaʔii /

A feature that distinguishes social program's announcers is that they produced a discussion or an interaction on a social topic. In this case, the announcer should present the speech with a fine control and modification of the basic acoustic cues: fundamental frequency, amplitude, and voice quality, which delineated the speaker's emotional state, whether happy, sad or anxious towards a specific matter. The data analysis results show extreme variations in the mean fundamental frequency of the utterances produced by the national and international announcers. The announcers' fundamental frequency reading values concerning the first utterance, "greeting utterance" /ʔ ahlan bikum/ are as follows: MCD male announcer =789.4Hz, Al-Mirbad male announcer=730.2 Hz, Baghdad male announcer =670.9Hz, and BBC male announcer =552.4 Hz. The national and international female announcers produce the same /ʔ ahlan bikum/ utterance. The fundamental frequency reading values are as follows: BBC female announcer=670.9Hz, MCD female announcer =611.7Hz, Al-Mirbad female announcer =493.2, and Baghdad female announcer= 434 Hz. The (F0) reading values indicate that male announcers produced a higher fundamental frequency than female announcers in both groups of the national and international radio stations. Because usually social programs require a soft voice, this characteristic is utilized by female announcers. However, there is a variation in the production of the fundamental frequency among female announcers; the international female announcer produced a higher pitch than the national female announcer. Moreover, MCD male announcer and Al-Mirbad male announcer produced the greeting utterance with a higher pitch than Baghdad male announcer and BBC

male announcer who utilized a modulated fundamental frequency.

The second utterance /ʃ ukan ʔ aziilan lakum/ has fundamental frequency reading values produced by the national and international male broadcasters in the following order: MCD male announcer=552.4Hz, Al-Mirbad male announcer=493.2Hz, Baghdad male announcer=434Hz, and BBC male announcer =374.7Hz. On the other hand, the same utterance is produced by the female announcers of both national and international groups. The reading values' results show that both Baghdad and MCD female announcers were similar in uttering /ʃ ukan ʔ aziilan lakum/ utterance with the same fundamental frequency=552.4 Hz. Likewise, BBC and Al-Mirbad female announcers produced /ʃ ukan ʔ aziilan lakum/ utterance with the same fundamental frequency=493.2.

The fundamental frequency values of the third utterance /wasaaʔ il tawaaʃ ! ʔ iz timaaʔ ii/ as produced by the national and international male announcers are as follows: MCD male announcer and Al-Mirbad male announcer produced a similar F0=611.7Hz, and the BBC male announcer and Baghdad male announcer produced a similar F0=552.4Hz, too. On the other hand, the same utterance is produced by the national and international female announcers, and the results values are as follows: Baghdad female announcer=611.7Hz, Al-Mirbad female announcer=552.4Hz, followed by both international radio station BBC and MCD announcers produced a corresponding fundamental frequency which is=493.2 Hz.

Amplitude

The results of the analysis delineate the mean amplitude of the national and international broadcasters who produced a social program. The results reveal that the mean amplitude of the reading values of the male national and international announcers in the case of the first utterance /ʔ ahlan bikum/ is measured to be as (1NM1= minimum> -0.7065, maximum> 0.6813, mean> 0.3444, the total energy in air> 0.0001946J/m²), (2NM1= minimum> -0.3512, maximum> 0.2671, mean>0.0393, total energy in air> 2.8833J/m²), (3IM1= minimum>0.2604, maximum> 0.3444, mean> 0.0502, total energy in air> 4.6208J/m²), (4IM1=minimum> -0.200993, maximum> 0.2407,mean>0.0530, the total energy in air> 6.8745J/m²). The mean amplitude reading values of the second utterance)/ʃ ukrān ʒ aziilan lakum/ which is produced by both the national and international male announcers are as follows: (1NM2=minimum>-0.4098, maximum> 0.5341, mean> 0.0797, the total energy in air>

2.2710J/m²), (2NM2= minimum> -0.28420, maximum> 0.3642, mean> 0.0688,the total energy in air> 1.3158J/m²), (3IM2= minimum> -0.18265, maximum> 0.1831, mean> 0.0299, the total energy in air> 2.6028J/m²), (4IM2= minimum> -0.2159, maximum> 0.2551, mean> 0.0511, the total energy in air> 6.7376J/m²).However, the third utterance that is presented by the national and international announcers /wasaaʔ ilil tawaa\$ il il ʔ iʒ timaa\$ ii/ has the mean amplitude (1NM3= minimum> -0.6164, maximum> 0.6157, mean> 0.1690, the total energy in air> 0.0001260J/m²), (2NM3= minimum> -0.1672, maximum> 0.1596, mean> 0.0299, the total energy in air>3.6545J/m²), (3IM3=minimum> -0.1265, maximum> 0.3041, mean> 0.0346, the total energy in air> 5.122531J/m²), (4IM3= minimum>-0.2941, maximum> 0.3212, mean> 0.0745,the total energy in air> 2.01404 J/m²), respectively for more clarification see table (3) below.

Table 3. The mean amplitude values of the national and international male announcers who produced social program's utterances

Announcer	Minimum amplitude	Maximum amplitude	Mean amplitude	The total energy in the air(J/m ²)
1NM1	-0.7065	0.6813	0.3444	0.0001946
1NM2	-0.4098	0.5341	0.0797	2.2710
1NM3	-0.6164	0.6157	0.1690	0.0001260
2NM1	-0.3512	0.2671	0.0393	2.8833
2NM2	-0.2842	0.3642	0.0688	1.3158
2NM3	-0.1672	0.1596	0.0299	3.6545
3IM1	-0.2604	0.3444	0.0502	4.6208
3IM2	-0.18265	0.1831	0.0299	2.6028
3IM3	-0.1265	0.3041	0.0346	5.1228
4IM1	-0.2009	0.2407	0.0530	6.8745
4IM2	-0.2159	0.2551	0.0511	6.7376
4IM3	-0.2941	0.3212	0.0745	2.01404

The presenter is the person who is chairing the discussion in a social program. Presenters modified their speech to correspond to the environment or the context of the discourse they are talking about. Through the data analysis, the results reveal that the variations of the amplitude parameter while producing the first greeting utterance /ʔ ahlan bikum/ by the national and international male announcer in the case of social program presentation are as follows:

(1NM1=0.3444 pascal, 4IM1=0.0530pascal, 3IM2=0.0502pascal, 2NM1=0.0393pascal). The results indicate that the mean amplitude values of both (Baghdad male presenter and MCD male presenter) in social programs production are higher than the other presenters (Al-Mirbad and BBC male announcers). The figures below clarify the mean amplitude variations among the national and international presenters' production of the first utterance /ʔ ahlan bikum/.

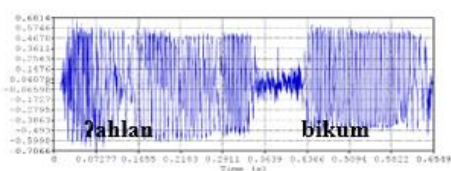


Fig (13) The mean amplitude of the national male presenter(1NM1/2NM1)

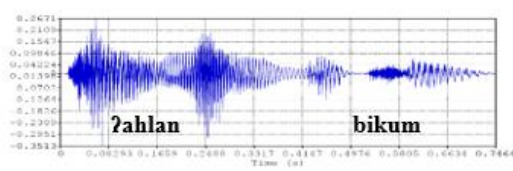


Fig (14) The mean amplitude of the international male presenter(3IM1/4IM1)

The analysis results reveal that there is a variation in the mean amplitude of the second utterance /ʃ ukran ʔ aziilan lakum/. Both groups of the national and international presenters produced this utterance, and the range of the amplitude values is as follows: (1NM1=0.0797 pascal, 2NM2=0.0688pascal, 4IM2=0.0511pascal, 3IM2=0.0299 pascal). This utterance is uttered by the presenters, usually to end a conversation with a guest or to thank someone who made a call to participate in a discussion, or to thank the

listening audience at the end of the program. The results expose that the two national announcers and the second international presenter produced the/ʃ ukran ʔ aziilan lakum/ utterance with a higher amplitude than the first international presenter. The production of this utterance is associated with “ softness “ and “ quietness” to express friendliness. The figures below show the variations in the mean amplitude among national and international male presenters who produced the /ʃ ukran ʔ aziilan lakum/ utterance in a social program.

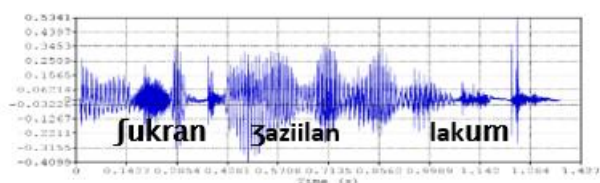


Fig.(15) The mean amplitude of the national male presenter(1NM2/2NM2)

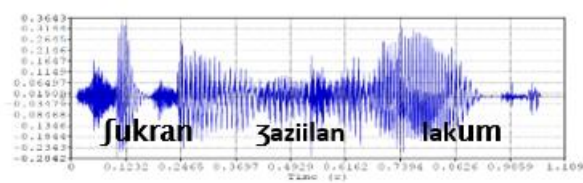


Fig.(16) The mean amplitude of the international male presenter(3IM2/4IM2)

The different mean amplitude values of the third utterance / wasaaʔ ilil tawaa\$ il il ʔ iz timaa\$ ii/ which is produced by the national and international male presenters are as follows: (1NM3=0.1690 pascal, 4IM3=0.0745 pascal, 3IM3=0.0346 pascal, 2NM3=0.0299 pascal). The results indicate that (Baghdad and MCD) male presenters produced the third utterance

/wasaaʔ ilil tawaa\$ il il ʔ iz timaa\$ ii/ with a higher amplitude than (BBC and Al-Mirbad) male presenters. The variation in the mean amplitude among the national and international presenters delivered an intelligible message to the listening audience, for more clarification, see the figures below.

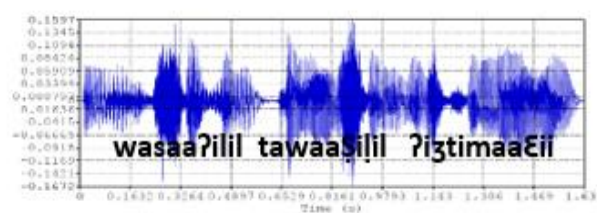
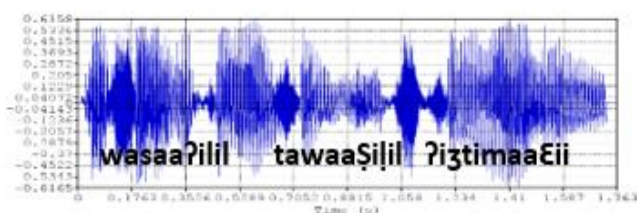


Fig.(17) The mean amplitude of the national male presenter's waveform(1NM3/2NM3)

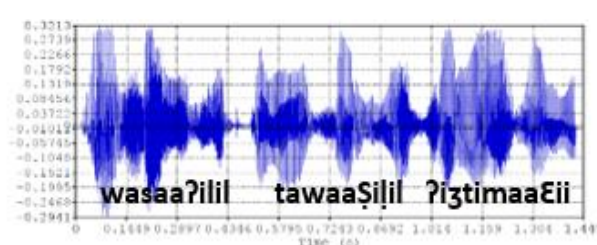
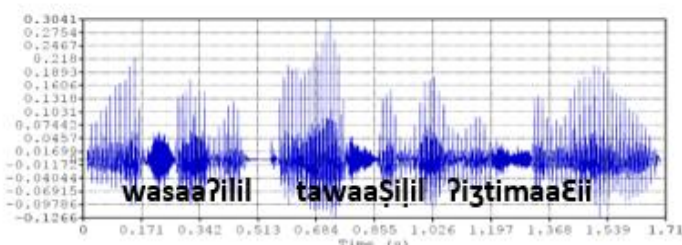


Fig.(18)The mean amplitude of the international male presenter's waveform(1NM3/2NM3)

The results of the same utterances' analysis assert that there is a significant contrast in reading the amplitude values of the national and international female presenters who produced social programs, as it is shown in table (4) below. The average amplitude reading values of the national and international female presenters in the production of the first utterance / ? ahlan bikum/ are found to be as follows: (1NF1=minimum> -0.0376, maximum> 0.0399, mean> 0.0128, total energy in air> 4.0390J/m²), (2NF1= minimum> -0.1525, maximum> 0.1969, mean>0.5298, total energy in air> 6.8598), (3IF1=minimum> -0.3311, maximum> 0.3879, mean> 0.0946, total energy in air>1.5625 J/m²), (4IF1=minimum> -0.1525, maximum= 0.2608, mean> 0.5561, total energy in air>5.2399J/m²). The mean amplitude readings of the second utterance / f ukan 3 aziilan lakum/ which is produced by the national and international presenters are as follows: (1NF2=minimum> -0.13486, maximum>

0.13481, mean> 0.0259, total energy in air> 2.3943J/m²), (2NF2= minimum>-0.0906, maximum>0/10626, mean> 0.0285, total energy in air> 3.2092J/m²), (3IF2=minimum> -0.3446, maximum> 0.2138, mean>0.0840, total energy in air> 1.8597J/m²), (4IF2= minimum> -0.3444, maximum> 0.4044, mean> 0.0970, total energy in air> 3.9411J/m²). The average amplitude of the third utterance / wasaa? ilil tawaa\$ il il ? iz timaaE ii/ that is presented by the two groups of the national and international female presenters are : (1NF3= minimum>-0.0897, maximum>0.0754, mean> 0.0139, total energy in air> 1.0808J/m²), (2NF3= minimum> -0.1788, maximum> 0.2621, mean> 0.04157, total energy in air> 8.5851J/m²), (3IF3= minimum> -0.1910, maximum> 0.2604, mean>0.0525, total energy in air> 1.0329J/m²), (4IF3=minimum>-0.2161, maximum> 0.3130, mean> 0.0668, total energy in air> 2.4014J/m²), as exhibited in the table below.

Table 4. The mean amplitude values of the national and international female presenters social program's utterances

ng Value	Announcer	Minimum amplitude	Maximum amplitude	Mean amplitude	The total energy in the air(J/m ²)
	1NF1	-0.0376	0.0399	0.01289	4.0390

1NF2	-0.13486	0.13481	0.0259	2.3943
1NF3	-0.0897	0.0754	0.0139	1.0808
2NF1	-0.1525	0.1969	0.5298	6.8598
2NF2	-0.0906	0.10626	0.0285	3.2092
2NF3	-0.1788	0.2621	0.04157	8.5851
3IF1	-0.3311	0.3879	0.0946	1.5625
3IF2	-0.3446	0.2138	0.0840	1.8507
3IF3	-0.1910	0.2604	0.0525	1.0329
4IFB1	-0.1525	0.2608	0.5561	5.2399
4IFB2	-0.3444	0.4044	0.0970	3.9411
4IFB3	-0.2161	0.3130	0.0668	2.4014

The results of the analysis reveal that the international female presenter (4IF) and the national female presenter (2NF) produced the first utterance /ʔ ahlan bikum/ with a greater amplitude than (3IF) and (1NF), that is (4IF1=0.5561, 2NF1=0.5298), (3IF1=0.946, 1NF1=0.01289) in

this order. The figures below show the mean amplitude of the first utterance /ʔ ahlan bikum/ as uttered by both the national and international presenters.

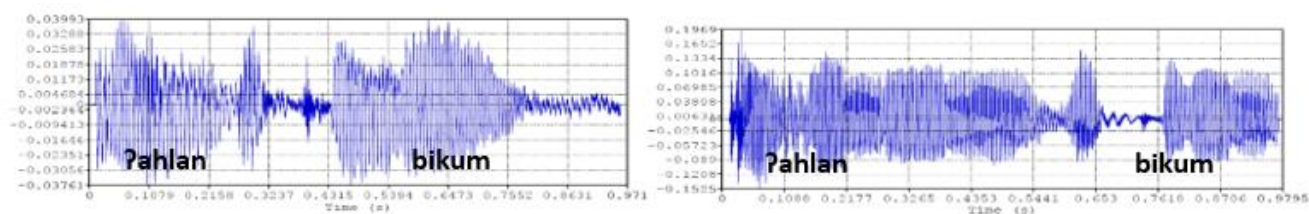


Fig.(19) The mean amplitude of the national female presenter(1NF1/2NF1)

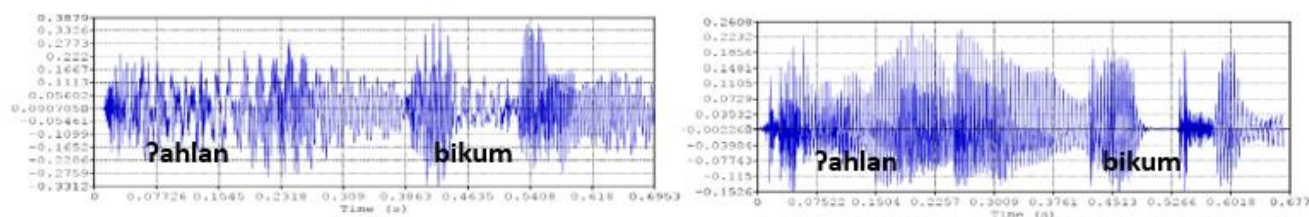


Fig.(20) The mean amplitude of the national female presenter(3IF1/4IF1)

Concerning the production of the second utterance /ʃ ukran ʒ aziilan lakum/, the analysis of the results affirm that the international female presenters uttered it with a higher amplitude than the national female presenters, that is (4IF2=0.0970, 3IF2=0.0840), (2NF2=0.0285, 1NF2=0.0259), respectively. The mean amplitude produced by both the national and international

female presenters shows a relative increase in the mean amplitude, and spontaneously, it reflects a specific voice quality that distinguishes the presenter of this utterance in expressing her friendliness and quietness towards the people whom she calls to. The figures below show the mean amplitude values of the national and international female presenters.

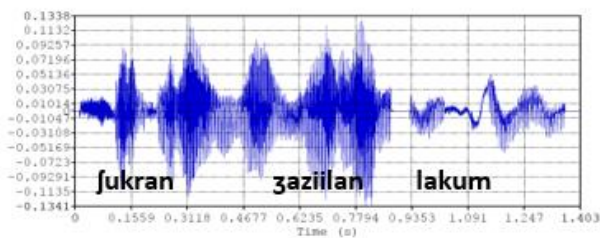


Fig.(20) The mean amplitude of the national female presenter(1NF2/2NF2)

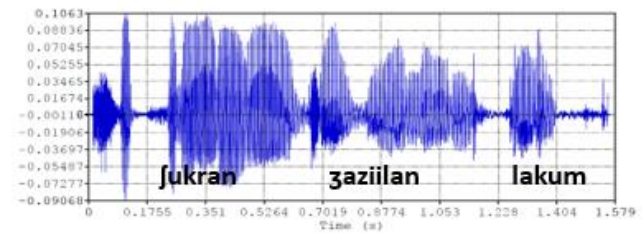


Fig.(21) The mean amplitude of the national female presenter(3IF2/4IF2)

The results of the analysis detect that the third utterance / wasaa?ilil tawaa?ilil ?iz timaaEii/ is uttered with a higher amplitude by the international female presenters than the national female presenters, that is (4IF3=0.0668,

3IF3=0.05561), (2NF3=0.04157, 1NF3=0.0132), in the order mentioned. The figures below exhibit the mean amplitude of both groups of female presenters.

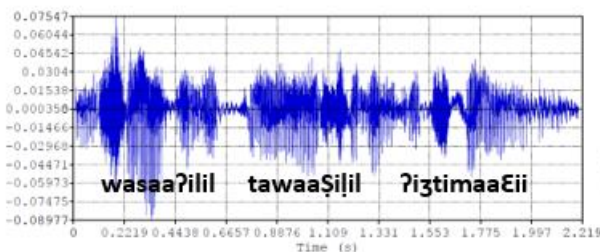


Fig.(22) The mean amplitude of the national female presenter(1NF3/2NF3)

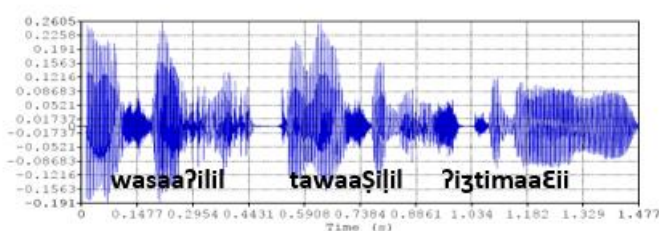
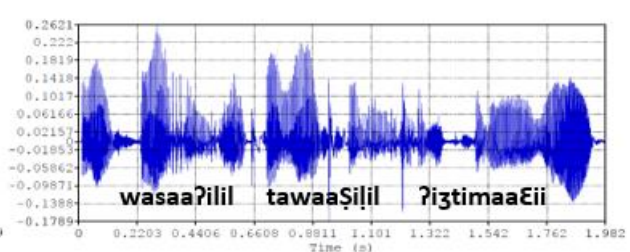


Fig.(23) The mean amplitude of the national female presenter(3IF3/4IF3)

Intensity

Intensity is the voice's energy which is based on the air pressure exerted on the vocal folds, which causes the vibration of the vocal folds. The data analysis results detect a difference in the production of the first utterance /? ahlan bikum/ which is uttered by the national and international

male presenters as follows: (1NM1=84.72dB, 2NM1=65.87dB, 3IM1=68.01dB, 4IM1=68.47dB). The intensity reading values of the second utterance / f ukran 3 aziilan lakum/ that is uttered by both groups of social program's male presenters are: (1NM2=72.02dB, 2NM2=70.74dB, 3IM2=63.5dB, 4IM2=68.15dB). The results of the intensity reading values of the

third utterance/ wasaa? ilil tawaa\$ il il
? iz timaaE ii/ are as follows: (1NM3=78.54dB,
2NM3=63.5dB, 3IM3=64.77dB, 4IM3=71.43dB)
in that order see table (5) below.

Table 5. The mean intensity values of the national and international male presenters social program's utterances

Intensity Reading Values in dB	1NM1	1NM2	1NM3
	84.72	72.02	78.54
	2NM1	2NM2	2NM3
	65.87	70.74	63.5
	3IM1	3IM2	3IM3
	68.01	63.5	64.77
	4IM1	4IM2	4IM3
	68.47	68.15	71.43

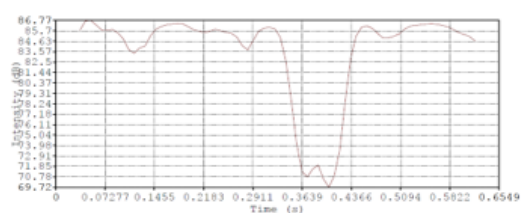


Fig.(24)The intensity value of(1NM1/2NM1) presenter's utterance

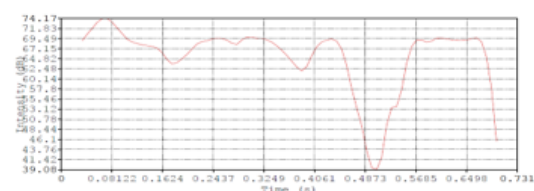
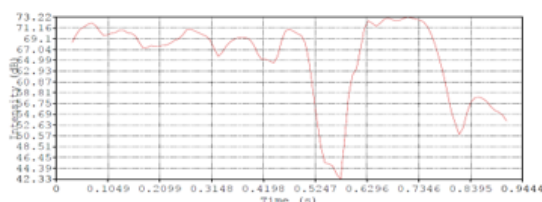
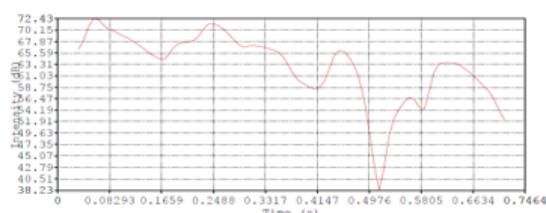


Fig.(25)The intensity value of(3IM1/4IM1) presenter's utterance

The results analysis show clearly the contrast in the production of the second utterance/ f ukan 3 aziilan lakum/, which is produced by both the national and international presenters. It is produced with a higher intensity by the national male presenters (1NM2= 72.02 and 2NM2=70.74dB), respectively, than the other

The results of the analysis show a remarkable contrast. The presenters' intensity values reveal that the national presenter uttered the first utterance/? ahlan bikum/ with a higher intensity (1NM1=84.72dB) than his national counterpart(2NM1=65.87dB), followed by the international male presenter who produced the /? ahlan bikum/ utterance with a higher intensity than his international counterpart (4IM1=68.47dB, 3IM1=68.01dB), respectively. The figures below clarify the mean intensity values of both the national and international presenters who produced this utterance in a social program.



presenters,whereas, the same utterance is uttered with a lower intensity by the international male presenters as follows: (4IM2=68.15 dB and 3IM2=63.5dB). The figures below display the mean intensity values of the national and international presenters' production of the second utterance / f ukan 3 aziilan lakum/.

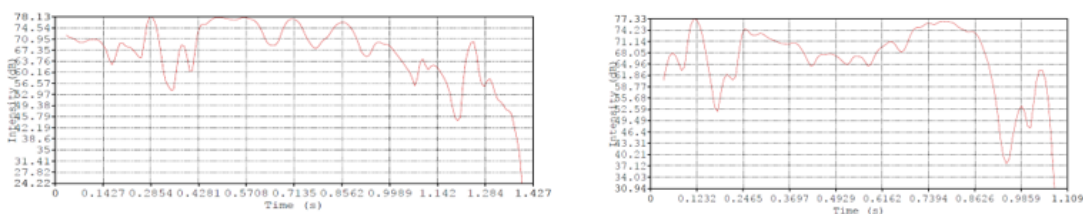


Fig. (26) The intensity value of(1NM2/2NM2) presenter's utterance

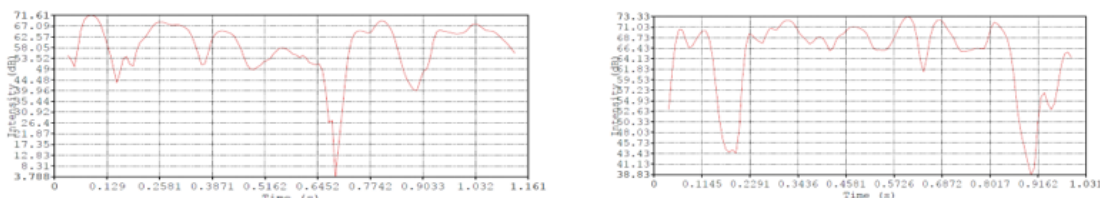


Fig. (27) The intensity value of(3IM2/4IM2) presenter's utterance

The results analysis expose a diversity in the intensity values of the third utterance / wasaa? ilil tawaa\$ il il ? iz timaaE ii/ among the national and international presenters in the production of social programs. The utterance is produced with an increased intensity by the first national male presenter (1NM3= 78.54dB) and the second international male presenter(4IM3=71.43dB) than

other male presenters who produced this utterance with a lower intensity value as follows: (3IM3=64.77dB and 2NM3=63.5dB). The figures below demonstrate the intensity mean values of both the national and international male presenters in the case of the production of the third utterance /wasaa? ilil tawaa\$ il il ? iz timaaE ii/.

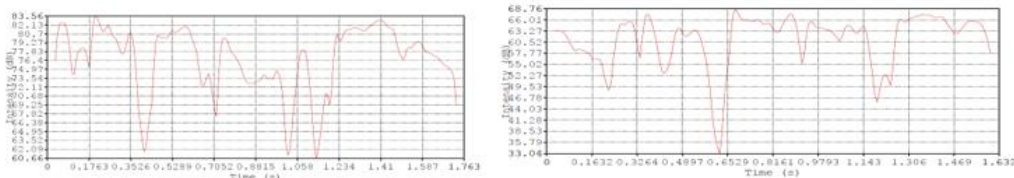


Fig. (28) The intensity value of(1NM3/2NM3) presenter's utterances

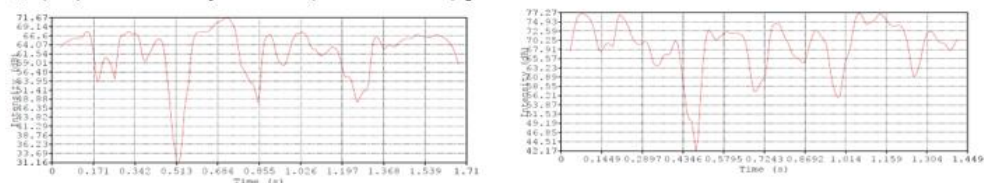


Fig. (29) The intensity value of(3IM3/4IM3) presenter's utterances

The same three utterances are uttered by the national and international female presenters who present social programs. The intensity reading values of the first utterance /? ahlan bikum/ are as follows: (1NF1=56.19dB, 2NF1=68.46dB, 3IF1=73.5dB, 4IF1=68.88dB). The second utterance /f ukan z aziilan lakum/ which the

national and international female presenters produced, has the following intensity values: (1NF2=62.26dB, 2NF2=63.08dB, 3IF2=72.48dB, 4IF2=73.72dB). The intensity values of the third utterance/wasaa? ilil tawaa\$ il il ? iz timaaE ii/ are calculated as follows: (1NF3=56.88dB, 2NF2=66.36dB, 3IF3=68.45dB, 4IF3=70.48dB), as it is displayed in the table below.

Table 6. The mean intensity values of the national and international female presenters' utterances

Intensity Reading Values in dB	1NF1	1NF2	1NF3
	56.19	62.26	56.88
	2NF1	2NF2	2NF3

	68.46	63.08	66.36
	3IF1	3IF2	3IF3
	73.5	72.48	68.45
	4IF1	4IF2	4IF3
	68.88	73.72	70.48

The results analysis reveals that the first national female presenter produced /ʔ ahlan bikum/ with a lower intensity (1NF1=56.19dB) than the other female presenters whose whispery voice indicate speaking quietly. This comes in contrast to the other female presenters who uttered /ʔ ahlan bikum/ with a high degree of intensity, as shown

in this order : (3IF1=73.5dB, 4IF1=68.88dB, 2NF1=68.46dB). The figures below illustrate the mean intensity values of both the national and international female newscasters in the production of the first utterance /ʔ ahlan bikum/.

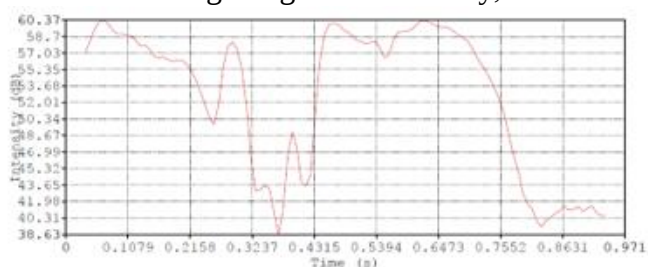


Fig. (30) The intensity value of(1NF1/2NF1) presenter's utterances

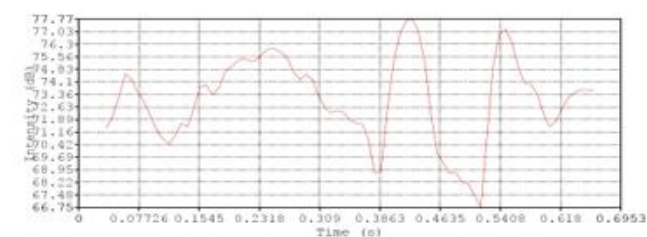
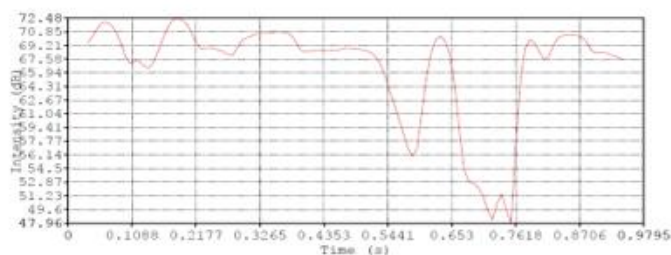


Fig. (31) The intensity value of(3IF1/4IF1) presenter's utterances

Furthermore, the analysis results expose a difference in the intensity values of the second utterance /ʃ ukran ʒ aziilan lakum/ that is produced by both groups of national and international female presenters. This utterance is uttered with a higher intensity by both the international female presenters (4IF2=73.72dB

and 3IF2=72.48dB) than the national female presenters (2NF2=63.08dB and 1NF2=62.26dB) who both used a modulate intensity. The figures below exhibit the national and international presenters' intensity values of the /ʃ ukran ʒ aziilan lakum/ utterance in a social program.

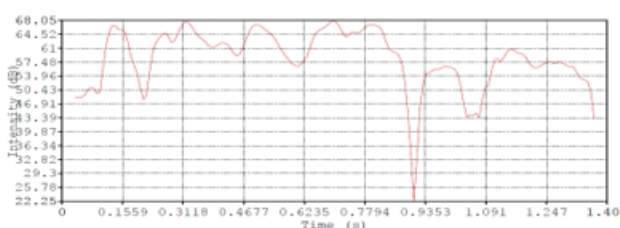


Fig. (32) The intensity value of(1NF2/2NF2) presenter's utterances

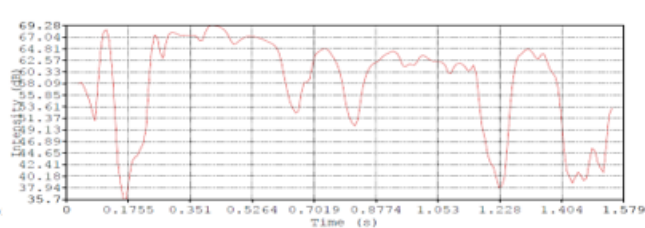


Fig. (33) The intensity value of(3IF2/4IF2) presenter's utterances

On the other hand, the results of the analysis state that the third utterance /wasaa? ilil tawaa\$ il il ? iz timaaE ii / which is uttered by the national and international female presenters is produced with a lower intensity by the national female presenter (1NF3=56.88dB) than the others. Then, it is followed by the second national female presenter (2NF3=66.36dB) and followed by the first international female presenter (3IF3=68.45)

who used a modulating intensity, in contrast to the second international presenter (4IF3=70.48) who produced /wasaa? ilil tawaa\$ il il ? iz timaaE ii / utterance with a higher intensity than the formers. The figures below show the intensity values of female presenters' production of the /wasaa? ilil tawaa\$ il il ? iz timaaE ii/utterance.

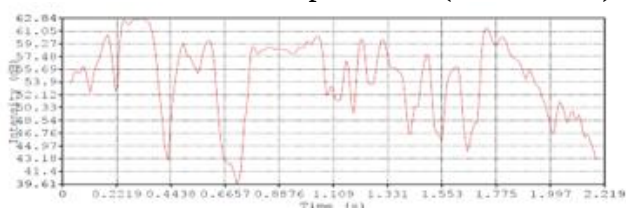


Fig.(34) The intensity value of(1NF3/2NF3) presenter's utterances

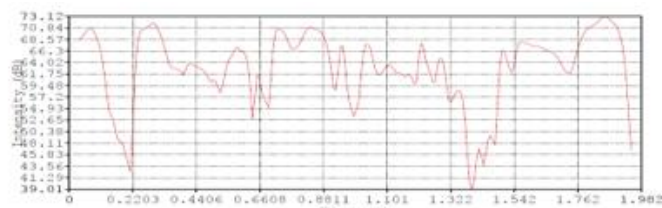


Fig.(35) The intensity value of(3IF3/4IF3) presenter's utterances

Duration of Time

The variation in speech production duration may convey a piece of valuable information from the speaker to the listener. Speech is a means of communication, and the difference in duration

bases on the type of discourse, the speaker's style, and inequality in the talker's speech rate (slow to normal, medium, or fast). The data analysis results expose the total duration of each utterance produced by the national and international male presenters in the presentation of the social

program. The total duration values of the first utterance /ʔ ahlan bikum/ are found to be (1NM1=0.656375sec., 2NM1= 0.746372sec., 3IM1=0.730979sec., 4IM1=0.9444sec.). Furthermore, the total duration values of the second utterance /ʃ ukran ʒ aziilan lakum/ are as follows: (1NM2=1.426979sec., 2NM2=1.109093sec., 3IM2=1.161338,

4IM2=1.030726sec.), and the total duration values of the third utterance/wasaaʔ ilil tawaaʃ il il ʔ iz timaaʔ ii / are measured as (1NM3=1.762979sec., 2NM3=1.632245sec., 3IM3=1.709909, 4IM3=1.448685sec.) in this order as shown in the table below.

Table 7. The total duration values of the national and international male presenters social program's utterances

Presenter	1NM1	1NM2	1NM3
Total duration values	0.656375	1.426979	1.762979
Presenter	2NM1	2NM2	2NM3
Total duration values	0.746372	1.109093	1.632245
Presenter	3IM1	3IM2	3IM3
Total duration values	0.730979	1.161338	1.709909
Presenter	4IM1	4IM2	4IM3
Total duration values	0.9444	1.030726	1.448685

The analysis results show that the average duration of the national and international male presenters' utterances is different. The variation of the utterances' duration values demonstrates the presenters' speech rate in the production and delivering an intelligible message to the listening audiences. The first utterance /ʔ ahlan bikum/ is produced at a medium speech rate by the international presenter (MCDmale presenter), viz (4IM1=0.9444msec.) than the other presenters. The BBC male presenter and Al-Mirbad male presenter produced /ʔ ahlan bikum/ utterance with a medium to fast speech rate, namely (3IM1=0.730979msec., 2NM1=0.746372msec.). In contrast, the first national presenter who affiliates to the Iraqi media network produced this utterance with a fast speech rate, viz (0.656375 msec.).

The average duration of the second utterance /ʃ ukran ʒ aziilan lakum/ is produced with a medium speech rate by the national presenter (1NM2=1.426979sec.) followed by the international male presenter, that is (3IM2=1.161338sec.). On the other hand, this utterance is produced with a medium to fast speech rate by both the international broadcaster (4IM2=1.030726sec.) and the national

presenter(2NM2=1.109093sec.). Concerning the third utterance/wasaaʔ ilil tawaaʃ il il ʔ iz timaaʔ ii / which is produced with a medium speech rate by the first national male presenter followed by the first international male presenter, specifically (1NM3=1.762979 sec, 3IM3=1.709909sec.), whereas the other two national and international male presenters produced it with a medium to fast speech rate, viz(2NM3=1.632245sec. and 4IM3=1.448685sec.).

The same three utterances are produced by the national and international female presenters. The total duration values of the first utterance/ʔ ahlan bikum/ which is produced by both groups of female presenters are as follows: (1NF1=0.970979msec., 2NF1=1.004603sec., 3IF1=0.698299sec., 4IF1=0.677642sec.). The total duration of the second utterance/ʃ ukran ʒ aziilan lakum/ is measured to be (1NF2=1.426979sec., 2NF2=1.579297sec., 3IF2=1.046712sec., 4IF2=1.691746sec.), and that for the third utterance /wasaaʔ ilil tawaaʃ il il ʔ iz timaaʔ ii / is read to be as (1NF3=2.218979sec., 2NF3=1.986757sec., 3IF3=1.476893sec., 4IF3=2.148277sec.), as given in the table below.

Table 8. The total duration values of the national and international females presenters, social program's utterances

Presenter	1NF1	1NF2	1NF3
The total duration of time values/sec.	0.970979	1.402979	2.218979
Presenter	2NF1	2NF2	2NF3
The total duration of time values/sec.	1.004603	1.579297	1.986757
Presenter	3IF1	3IF2	3IF3
The total duration of time values/sec.	0.698299	1.077460	1.476893
Presenter	4IF1	4IF2	4IF3
The total duration of time values/sec.	0.677642	1.691741	2.148277

The results show that the average duration values of the national and international female presenters' utterances in social program production vary. The total duration values of the first utterance /ʔ ahlan bikum/ are produced with a normal speech rate by the two national female presenters, namely (2NF1=1.004603 sec. and 1NF1=0.970979msec.). This comes in contrast with other international female presenters who produced /ʔ ahlan bikum/ with the medium to fast speech rate, viz (3IMF1=0.698299msec. and 4IF1=0.677642msec.).

The results expose that the total duration values of the second utterance /ʃ ukrān ʒ aziilan lakum/ is uttered with a medium speech rate by the international female presenter, that is (4IF2=1.69174sec.) followed by the national female presenter, namely (2NF2=1.579297sec.). On the other hand, the BBC female and Baghdad female presenters, uttered /ʃ ukrān ʒ aziilan lakum/ with a medium to fast speech rate, that is to say (1NF2=1.402979sec. and 3IF2=1.077460sec.) respectively. The results of the average duration values of the third utterance /wasaaʔ ilil tawaaʔ il il ʔ iʒ timaaʔ ii / denote that the national female presenter who affiliates to the Iraqi media network and MCD female presenter uttered it with a slow speech rate, namely (1NF3=2.218979sec. and 4IF3=2.148277sec.). The national female broadcaster uttered /wasaaʔ ilil tawaaʔ ilil ʔ iʒ timaaʔ ii/ with a medium to fast speech rate, viz, (2NF3=1.986757sec.), while The BBC female

presenter uttered it with a medium speech rate, that is (3IF3=1.476893sec.).

Conclusion

We can conclude from the aforementioned results that male broadcasters produced the first utterance /ʔ ahlan bikum/ with a higher fundamental frequency than female broadcasters in both national and international groups. In contrast, the second /ʃ ukrān ʒ aziilan lakum/ and the third /wasaaʔ il tawaaʔ il il ʔ alʔ iʒ timaaʔ ii/ utterances are produced with a modulated fundamental frequency that is neither too high nor too low by all male and female announcers to correspond with the context of producing a social topic that requires a quiet and soft voice quality. In general, the results reveal that the national male presenters produced the three utterances with a higher amplitude than the national female presenters, whereas the international females' presenters uttered the three utterances with a higher amplitude than the international male presenters. The data analysis results reveal that the national male presenter (Baghdad radio station) uttered the three utterances with a higher intensity than other male presenters and the female presenters. The international female presenters of (BBC and MCD) produced the three utterances with a higher intensity than their counterparts of (BBC and MCD) male presenters. In addition to that, the second national female presenter of (Al-Mirbad radio) produced the first utterance /ʔ ahlan bikum/

and the third one /wasaaʔ ilil tawaaʂ il il ʔ iʒ timaaʔ ii / with a higher intensity than (Al-Mirbad radio) female presenter, but the second utterance /ʃ ukran ʒ aziilan lakum/ is produced with a higher intensity by the male presenter than his counterpart national female presenter.

Moreover, the international presenter (MCD male presenter) used a medium speech rate, in contrast to Al-Mirbad's presenter and the BBC's presenter, who used a medium to fast speech rate and Baghdad's presenter who used a fast speech rate in the case of the production of /ʔ ahlan bikum/ utterance. In contrast, the two national female presenters produced /ʔ ahlan bikum/ with a normal speech rate, in contrast to the international female presenters who produced /ʔ ahlan bikum/ with a medium to fast speech rate. Moreover, the /ʃ ukran ʒ aziilan lakum/ utterance is produced with a fast speech rate by the BBC's male presenter and Baghdad's male presenter. In contrast, MCD's male presenter and Al-Mirbad's male presenter uttered /ʃ ukran ʒ aziilan lakum/ with a medium to fast speech rate. The same utterance is produced with a medium speech rate by the MCD's female and Al-Mirbad's female presenters, in contrast to the BBC's female and Baghdad's Female presenters who uttered /ʃ ukran ʒ aziilan lakum/ with a medium to fast speech rate. In addition to that, the third utterance /wasaaʔ ilil tawaaʂ il il ʔ iʒ timaaʔ ii/ is produced with a medium speech rate by Baghdad's male and the BBC's male presenters, whereas, Al-Mirbad's male and MCD's male presenters uttered it with a medium to fast speech rate. On the other hand, Baghdad's female and MCD's female presenters uttered the utterance with a slow speech rate, in contrast to the Al-Mirbad's female presenter who uttered it with a medium to fast speech rate, and to the BBC's female presenter who produced it with a medium speech rate. Notwithstanding the variation in the average duration of the time values produced by both groups of the national and international male /female presenters in the production of the social utterances, they deliver intelligible messages to the audience.

The above discussions of the variation in the acoustic parameters produced by the national and

international male/female broadcasters, in the production social -program's utterances. The researcher came up with the results which assert the hypothesis of the study, as follows:

1. A remarkable variation of the national and international broadcasters' fundamental frequency values in the greeting /ʔ ahlan bikum/ utterance production. It is uttered with different fundamental frequency values among male national and international announcers. The results prove that male presenters generally produced it with a higher fundamental frequency than female presenters of national and international groups. A noteworthy result shows similar fundamental frequency values in the production of /ʃ ukran ʒ aziilan lakum/. It is uttered similarly by the IMN's female presenter and the MCD's female presenter that is (552.4Hz). Likewise, the BBC's and Al-Mirbad female broadcasters uttered it with the same F0, as (493.2Hz). Also, /wasaaʔ ilil tawaaʂ il il ʔ iʒ timaaʔ ii / is uttered similarly by the MCD's male presenter and Al-Mirbad's one, and the BBC's male presenter and IMN's male broadcaster as well. On the other hand, the same utterance is produced with higher F0 values by the national female broadcasters than the international ones.
2. A prominent variation in the amplitude parameter's acoustic cue indicates that the national male presenters uttered the three corresponding utterances with variance amplitude values from the international ones. There is a remarkable difference in the amplitude reading values among the female announcers of both groups. Simultaneously, the data analysis reveals that the national female announcers uttered the three corresponding utterances with increased amplitude than the national male broadcasters. The international female presenters produced the three utterances with higher amplitude values than their male counterparts' announcers.

3. The study analysis reveals an eminent diversity in the acoustic property of intensity values in the production of the three utterances among national and international announcers. Moreover, the(BBC and MCD) female presenters uttered the three utterances with increased intensity values than their male counterparts. On the other hand, the national male broadcaster of IMN produced the three utterances with increased intensity value than his female counterpart. In contrast, the first utterance and the last one are uttered with higher intensity values by the national female of Al-Mirbad radio than her male counterpart, except the /ʃ ukran ʒ aziilan/ utterance that is uttered with increased intensity value by the male announcer than his female counterpart of the same radio station, namely Al-Mirbad.
4. The acoustic parameter of the duration of time signed a diversity in the production of the three utterances among male/female announcers of both groups. The national and international broadcasters uttered social – program's utterances with different speech rates contradictory between (slow, normal, normal to medium, medium, medium to fast, and fast) speech rate.

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