

Prosodic Features of the 2020 U.S. Presidential Debates

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Abstract

From the second half of the twentieth century until now, American presidential debates have become a prominent event of the political rally. Prosodic features including tone, stress, and intonation are main instruments to convey the unspoken intended meanings of the presidential candidates to the addressees. This is because these features are characteristics of syllables and prosodic phonology of spoken utterances. In the 2020 U.S. presidential debates, the two candidates are the Republican nominee, Donald J. Trump, and the Democratic nominee, Joe R. Biden Jr. Both spare no effort to utilize these features powerfully to express either the emotional states or the attitudes. The purpose of this study is to analyze the 2020 two American presidential debates through the examination of three prosodic features, stress, tone, and intonation revealed across the two presidential debates between Trump and Biden. In addition, it points out these prosodic features can reflect the emotional states and attitudes' utterances of the two American presidential candidates and how the addressees can recognize and react to the influential prosodic features employed by the two candidates. Ubiquitous existence of these features clarifies the form in which the spoken utterance is expressed, such as declarative, interrogative, imperative, and exclamatory. Moreover, the two candidates attempt to convey the tone of satire, emphasis, contrast, and focus...etc. These features may not be echoed grammatically or lexically, but prosodically. Hence, this paper examines how two American presidential candidates attempt to employ some prosodic features to make their addressees support and sustain their political agenda. Prosodic features can be identified when sounds are amalgamated in connected speech as a means of communicating appropriately. The two presidential candidates employ their own techniques of these prosodic features to persuade their addressees to adopt their beliefs revealed through their two public debates. In turn, these features also allow the addressees to recognize the leading personality of the candidates. The significance of the current study lies in the questions of how consistently the prosodic features are exploited by the two American presidential candidates to realize their emotional states and attitudes, and to what extent the addressees can identify and recognize the message contained in the prosodic features utilized by the two presidential candidates. Furthermore, the outcome of this study using qualitative statistical analysis, clarifies the reason why Biden managed to persuade most Americans to vote for him. Additionally, Praat software program is employed for voice aspects analysis to classify the candidates' emotional states and their intended attitudes. Voice aspects analysis regarding intensity, pitch height, duration or formants can reveal anger, sadness, happiness, disgust, and sarcasm.

Keywords: Prosodic features, Presidential debates, Intonation, Pitch, Stress, Tonic syllable.

السمات التنغيمية للمناظرات الرئاسية الأمريكية لعام ٢٠٢٠

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المستخلص

منذ النصف الثاني من القرن العشرين وحتى الآن ، أصبحت المناظرات الرئاسية الأمريكية حدثاً بارزاً في السباق السياسي. وتعد السمات العامة ، بما في ذلك النغمة والنبر والتنغيم ، أدوات رئيسة لنقل المعاني المقصودة غير المعلنة لمرشحي الرئاسة إلى من يخاطبهم. وذلك لأن هذه السمات هي تميز المقاطع وعلم الأصوات للألفاظ المنطوقة. وفي المناظرات الرئاسية الأمريكية لعام ٢٠٢٠ ، كان المرشحان هما المرشح الجمهوري ، دونالد ج. ترامب ، والمرشح الديمقراطي جو آر بايدن. وكلاهما لم يدخر جهداً لتوظيف هذه الميزات بقوة للتعبير والوصول الي الناخب سواء عن طريق العاطفة أم عن طريق التوجهات والمواقف. ان الغرض من هذه الدراسة هو تحليل المناظرتين الرئاسيتين الأمريكيتين لعام ٢٠٢٠ من خلال فحص ثلاث سمات تنغيمية هي النغمة ، والنبر ، والتنغيم التي تم الكشف عنها عبر المناظرين الرئاسيين بين ترامب وبايدن. بالإضافة إلى ذلك ، فإنه يشير إلى أن هذه السمات العامة يمكن أن تعكس الحالات العاطفية وتصريحات المرشحين للرئاسة الأمريكية وكيف يمكن للمخاطبين التعرف على السمات المؤثرة التي يستخدمها المرشحان والتفاعل معها. ان تواجد هذه السمات يشكل ويغير معني الكلام المنطوق ، علي سبيل المثال التصريح والاستفهام والحتمية والتعجب. علاوة على ذلك ، يحاول المرشحان ايصال نبرة السخرية والتأكيد والتباين والتركيز ... إلخ الي الناخبين. قد لا تكون لهذه السمات صدى نحوياً أو معجمياً ، ولكن بشكل تنغيمي. ومن ثم ، فإن هذه الورقة تبحث في كيفية محاولة المرشحين للرئاسة الأمريكية استخدام بعض السمات الصوتية لجعل من يخاطبهم يدعمونهم ويحافظون على أجندتهم السياسية. ويمكن تحديد السمات العامة هذه عندما يتم دمج الأصوات في الكلام المتصل كوسيلة للتواصل بشكل مناسب. ويستخدم المرشحان الرئاسيان اساليبيهما الخاصة لهذه السمات العامة لإقناع من يخاطبونهم ليتبنوا معتقداتهم التي تم الكشف عنها من خلال المناظرتين. بدورها ، تسمح هذه السمات أيضاً للمخاطبين بالتعرف على الشخصية القيادية للمرشحين. وتكمن أهمية الدراسة الحالية في الأسئلة المتعلقة بمدى استمرار توظيف المرشحين للرئاسة الأمريكية للخصائص التنغيمية لإدراك توجهاتهم ومواقفهم العاطفية ، وإلى أي مدى يمكن للمخاطبين التعرف على الرسالة الواردة في السمات العامة المستخدمة من قبل اثنين من المرشحين للرئاسة. علاوة على ذلك ، فإن نتيجة هذه الدراسة باستخدام التحليل الإحصائي الكمي والنوعي ، توضح سبب تمكن بايدن من إقناع معظم الأمريكيين بالتصويت لصالحه. بالإضافة إلى ذلك ، يتم استخدام برنامج برات لتحليل جوانب الصوت لتصنيف الحالات العاطفية للمرشحين ومواقفهم المقصودة فيما يتعلق بالتشديد ، وارتفاع النبر ، والمدة المستغرقة للتعبير عن الغضب ، والحزن ، والسعادة ، والاشمئزاز ، والسخرية.

الكلمات المفتاحية: السمات التنغيمية ، المناظرات الرئاسية ، التنغيم ، حدة الصوت ، النبر ، المقطع التنغيمي.

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1. Introduction

Like any other process of communication, presidential debates are based on spoken language as the medium of communication in presidential debates. Charteris-Black (2005) points out that autocratic, oligarchic, and even democratic leaders use the spoken word to convince others that they can benefit from their leadership (p.1). Thoughts and beliefs are communicated during presidential political debates campaigns. Thoughts and beliefs are conveyed through language. Moreover, they have significant implications for election results as a status quo. Presidential debates may be a matter of presenting opinions, ideas and valid arguments when the presidential candidates debate publicly, they make several decisions or deliver their agenda which affect how their opinions or ideas are received by the addressees. The sequence in which they provide their programs and the language they use extremely determine the overall picture the addressees perceive. Throughout these decisions, candidates propose prospective, ideological, and strategic of their own views. In the meantime, there is no such thing as an unbiased attitude, no such thing as 'neutral' language (Beard, 2000, p. 18).

Presidential debates are incorporated under the genre of political discourse because of their contextual features. Chilton (2004) explains that "presidential debates integrate political context and preceding political historical references identified by the audience (pp. 72-73)." This type of debate has a particular setting and specific techniques followed by the presidential candidates, such as a limited time to express their points of view and face-to-face interaction between the moderators and the presidential candidates. In this context, Van Dijk (1997) notes that "presidential candidates, as part of their agenda, attack opponents and political enemies and highlight the bad policies of their opponents (p.25)."

In this event, prosodic features are analyzed through tone, pitch, intensity, and intonation, aiming at organizing the structure of sound stress. These features can be identified as significant and regularly used. There are also features such as rhythm, voice quality, loudness, and tempo. These prosodic features are illustrated in the following diagram.

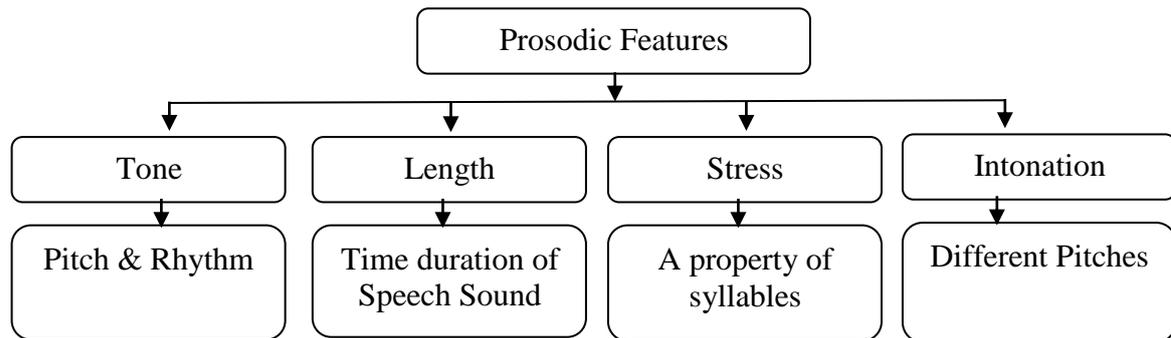


Figure 1: Prosodic feature components

In this diagram, prosodic features consist mainly of four components, i.e., tone, length, stress and intonation. The tone is sensed via pitch and rhythm. Stress produces unstressed, and stressed syllables, so it is a property of syllables. Prosodic stress is also used to change word meaning or to focus the attention on particular words or the ideas associated. Length is the time duration of speech sound measured in milliseconds. It is the time taken to utter one unit of speech sounds (Fox, 2000, p.12). Intonation is the rising and falling of the voice's pitch during speaking. The intonation is marked by the marks \nearrow and \searrow over the syllables to show their relative pitch (Armstrong and Ward, 1967, pp. 1-2).

1.1. Prosodic Features of the 2020 two Presidential Debates

Prosodic Features tackle spoken words which are sometimes polysyllabic i.e., have more than one syllable distinguished by a stress mark (') following the stressed syllable. A pitch is the rate at which the vocal cords vibrate, known as the fundamental frequency (FO) of voiced sounds. It is an auditory sensation that is experienced by the addressee. A pitch prominence that is more prominent than stress is often called an accent (Ashby and Maidment, 2005, pp 167-8). By combining intonation and stress, persuasive prose draws attention to key syllables or utterances (Wells, 2006, p.116). A speech utterance is the result of two physical processes: a sound source (the vocal cords) and filtering by (tongue, lips, teeth, etc.). Analysis of pitch identifies the fundamental frequency of the sound source. It is this fundamental frequency that dominates the sound produced by the vocal cords.

1.2. Stress As a Prosodic Feature

Crystal (1969) defines prosodic features as "a set of mutually defining phonological features with an essentially variable relation to the words selected (p.5)". However, Gut (2013) defines stress as a property of syllables which "refers to the relative prominence a syllable has (244)". Therefore, stress is the tool of making a syllable prominent by several

variables. This happens via individual words “lexical stress”, or larger units of speech “sentence stress”. Consequently, stress is characteristically connected to the following three features:

- a. pitch prominence which is an individual level of a pitch movement.
- b. duration which means increased length of time.
- c. dynamics which means increased amplitude of the sound wave involved ‘loudness’.

In this context, Collins and Mees (2013) suggest that stress is related to vowel quality, formant frequency, or vowel spectrum (p. 129). “Crittenden (1997) argues that the English language has three features, namely pitch, length, and loudness that constitute a measure of the importance of stressing syllables. (p. 13).

In this context, Gut (2009) proposes that prosodic stress or sentence stress refers to the prominence placed on certain words called “content or lexical words” within a sentence. Lexical words include nouns, verbs, adjectives, and adverbs. Functions and structures, however, are frequently unstressed, because they principally help complete the syntax and grammatical construction of a sentence.

These function or structure words include pronouns, prepositions, conjunctions, articles, determiners, interjections and auxiliary verbs. In addition, function words that have several syllables have internal word stress on one of their syllables. For example, the words (until) and (because) have two syllables with the second syllable is being stressed /ən'tɪl/ and /bɪ'kɔz/. Generally, prosodic stress helps maintain the tone and flow of the sentence in speech (pp. 89-90).

1.3. Intonation As a Prosodic Feature

Gut (2009) divides phonology into two areas: segmental and prosodic phonology. Segmental phonology deals with speech sounds, whereas prosodic phonology is concerned with larger units such as syllables, words and intonation phrases (p.7). Intonation means variation in pitch, volume, tempo, and rhythm. These features make up intonation, stress, and rhythm. Relatedly, loudness standing for weak and strong syllables, and for special stress on core syllables. It can also be used for other effects such as, anger (although anger can also be expressed by very quiet, tense speech). In public speaking, candidates often create strong effects by varying the volume. Intonation has both perception and production aspects. The perception aspect describes the relevant acoustic properties that actually serve a function in the perception (and processing) of the fundamental frequency (FO) as intonation ('t Hart et al., 1990). The production aspect examines how speakers utilize intonation in a range of

contexts and under specific conditions (Blaauw, 1994, p.144, Face, 2003, p.115, Howell and Kadi-Hanifi, 1991, p.162).

1.4. Nature of Prosodic Features

The prosodic features describe chunks of speech larger than a distinct segment of a speaker's voice, using rhythms in pitch to differentiate between forms of communication ⁽¹⁾. The prosodic features include pitch, intensity, and duration of the syllable. Prosodic distinguishes between three aspects, according to Hirst and Di Cristo (1998) as follows:

- a. auditory measures induced in the mind of the addressee.
- b. physical or objective standards induced by the sound wave.
- c. physiological features of articulation.

Therefore, the nature of prosodic features has some specific attributes, either in auditory or acoustic properties. In the auditory feature, the main properties are:

- a. There is a variety in the pitch of the voice between high and low.
- b. There is a difference in length between the long and short sound.
- c. prominence varies between loud and soft.
- d. voice quality characterize the quality of sound variations in the way of speech (pp. 4–7).

In the acoustic aspect, the major properties, according to Johnson (2003), are:

- a. fundamental frequency (F0) i.e., the repetition rate of vocal fold vibration, measured in cycles per second, or hertz (p.7).
- b. The duration of a cycle can be measured in milliseconds or seconds.
- c. intensity, a way of expressing sound proportional to the square of amplitude (p.50).
- d. spectral features produced by encoding the spectral amplitude in a series of Fast Fourier Transform (FFT).
- e. spectra as shades of gray in the spectrogram (p.55).

Accordingly, in order for the addressees to understand the meaning implied and intended, prosodic characteristics of words and sentences have to be considered.

2. Literature Review

Reviewing previous studies enables this study to recognize these features during speech and to incorporate their data into real-world understanding. Contextually, understanding can be found associated with the emotional states and attitudes through a combination of prosodic features. Currently, such features appear to be satisfactorily incorporated into the analytical debates that are used by the presidential candidates. The importance of this study is undertaken to identify how presidential candidates employ some prosodic features to convey their intended meanings to their

addressees. Some studies attempt to investigate the presidential debates from a point of perspective other than the phonetic or phonological level, particularly, the prosodic properties. Therefore, this study is intended to tackle this perspective to examine the influence of tones, lexical and sentential stress, pitch and intonation on decision making on the part of the addressees. Consequently, there are a lot of studies conducted from this perspective. In the field of political debates, there are many studies presented and discussed. One of these studies was provided by Tutora and Ferrada (2018) entitled "The 2016 U.S. Presidential Debates." In this study, presidential debates are tackled as an essential part of the political campaign to enable candidates to win elections. Indeed, candidates use their own linguistic and rhetorical techniques to persuade the audience through oral debates. The purpose of this study was to examine political discourse through seven linguistic features, including personal pronouns, three-part lists, contrastive pairs, conceptual metaphors, filler words, and equivocations. The study concludes that Trump and Clinton speak and behave differently, despite the fact that they both wish to gain the support of most American voters and win elections. However, their ideologies are based on different principles. Analyzing selected linguistic aspects in the three presidential debates between Donald Trump and Hillary Clinton in 2016 supported the hypothesis examined in this study.

Concerning prosodic features, Al-Sibai (2004), provided a study entitled "A Prosodic Aspect of the English Language". This study examines the way in which intonation words or phrases are articulated, rather than the lexical content of these words or phrases. Study findings suggest that intonation can easily convey linguistic and paralinguistic information to the intended audience. It also examines mistakes made by some addressees as a result of their inability to recognize the functions of intonation. Thus, it shows that most speakers provide subjective assessments and evaluations of other people through prosodic speech features based on subjective assessments and evaluations. According to Pike (in Hewings (1995), "we respond more violently to intonational meanings than to lexical ones; if a person's voice tone belies his words, we assume he is more accurate in reflecting his linguistic intentions." (p. 251). However, Al-Sibai's study concentrates mainly on the aspect of intonation, and neglects other features that can help the addressees recognize the intended meaning, such as the linguistic or situational context of communication.

Similarly, Lehiste (1970), Moore and Leak (1999) propose that prosodic features of speech are associated with segments larger than segments, such as pitch, stress, and duration. They explain that speech can be analyzed from two perspectives: phonetic reality, i.e., the acoustic speech

waveform integrated into the listener's perceptual analysis of the auditory signal, and discrete mental representation, which serves as the set of directives from which the speaker constructs the phonetic signal. This study emphasizes the function of three prosodic features found in languages. These features are articulation, acoustics, and perception. Furthermore, this study generalizes the notion that all languages can be divided into two components in terms of prosodic structure: a. a hierarchical division of the segmental chain into phonological components such as the syllable and the intonational phrase, the so-called prosodic hierarchy, as described by Selkirk (1978), Nespor and Vogel (1986), and Hayes (1989); b. Tonal structure connected to segmental and prosodic structure, superimposed on the segmental chain, as described by Pierrehumbert and Beckman (1988) and Ladd (1996).

Moreover, Braga and Marques (2004) provided an illuminating study on “The Pragmatics of Prosodic Features in the Political Debate”. In this study, the prosodic features integrated with the pragmatic meanings are provided. This study is the outcome of analyzing spontaneous utterances from a corpus of political debates in European Portuguese. They propose that prosodic elements are intentionally and deliberately manipulated in order to be related to syntactic structures, lexical choices and pragmatic meanings. In order to construct argumentative discourses, they assert the existence of a prosodic grammar that works in conjunction with linguistic and rhetorical devices.. They attempt to describe and justify the prosodic features and the possible communicative meanings associated with them. This study also proposes a typology of pragmatic effects. It is mainly focused on pragmatic studies, improvements, and applications of speech synthesis. Finally, it concludes that the presidential candidate can manipulate tone, intensity, and stress; a prosodic strategy can convey an opinion or a particular stance in a political debate. Prosodic strategies are intentionally chosen by the speaker to strengthen his argumentation.

.3. Data and Methodology

The data of this study are analyzed via Praat software program designed by Boersma and Weenink (2007). This software displays voice report on intensity, pitch, fundamental frequencies (FO), and formant of any utterance. Each utterance chosen has also been analyzed in terms of total duration and maximum values. Prosodic features of the two presidential debates are extracted according to the given topic. Furthermore, utterances are classified into information units, tone units, tone groups, intonational phrases, or word groups. Prosodic features can be used to identify the candidates' emotional states and attitudes, in which most attention is paid to the question of whether the prosodic features play a

role in understanding intended meanings via conveying the emotional states and attitudes, or there is a preponderance of the relationship between prosodic features and other aspects of linguistic approaches. In order to verify this study, some excerpts are selected succinctly with the name of the candidate, besides time and number of the debate either first (1st) or second (2nd) of the given utterance. Below each utterance in a figure, there is the candidate's sound.

4. Objectives of the Study

This study examines how the two presidential candidates Trump and Biden instrument their emotional states and attitudes during the two debates held in 2020. The objectives of this study are as follows:

1. To reflect various prosodic features of the emotional states and attitudes' utterances as
communicative functions employed by Trump and Biden.
2. To recognize how the addressees can react to the message contained through the prosodic features
through tone, pitch, and intonation utilized by Trump and Biden.
3. To clarify the influential prosodic features that contribute to identifying intended meanings of
utterances employed by Trump and Biden.

5. Questions of the Study

The purpose of this study is to answer the following questions:

1. How consistently do the prosodic features, employed by the two American presidential candidates,
realize their emotional states and attitudes?
2. To what extent are the addressees able to recognize the message contained in the prosodic features
utilized by the two presidential candidates?
3. What are the influential prosodic features that contribute to identifying intended meanings of
utterances employed by the two presidential candidates?

6. Discussion and Analysis

6.1. Tonal Features of the 2020 Presidential Debates Utterances

Tone and intonation are two characteristics of pitch variation. Gussenhoven (2004) argues that tone and intonation enable the presidential candidates of many languages to give shape and tune to their utterances. The type of tone typically delimits morphemes, but intonation gives utterances a further paralinguistic meaning that is independent of the meanings of the words individually (p. I). Therefore, the tone in spoken English is a linguistic feature that uses pitch to distinguish lexical meanings or grammatical categories of parts of speech. Presidential

candidates utilize types of tone to express their emotional states such as anger, fear, sadness, disgust and enjoyment, and there are other paralinguistic features, such as gestures, facial expressions, eye contact, body language, pitch, and tone of voice. In presidential debates 2020, the American candidates employ these tonal features to appropriately convey emphasis, contrast, surprise and other and other characteristics of intonation. As Hyman (2001b) and Welmers (1973) define, tone languages are those that convey pitch indications through their lexical realizations. According to them, the pitch of the voice can be determined by the fundamental frequency (FO), which is voice's vibration rate. This (FO) is measured by the number of cycles per second or hertz (Hz), as stated by Lehiste (1970), and Laver (1994). There are descriptive labels attributed to tones like H, L, M, F, R, standing for High, Low, Mid, Fall, and Rise to represent vibration of tones (Roach, 2012, pp.179). Nature of tone comprises lexical or grammatical significance, whereas tonal features are a central property of a morpheme, word, or grammatical construction. Accordingly, there are three features characterizing the nature of the tone. The first characteristic is the fundamental frequency (F0), A hertz (Hz) is a measure of frequency, which means one cycle per second. Second, the pitch results from varying tension in the vocal cords and changing laryngeal height. (Hirose, 1997, p.116). Finally, Tone distinguishes two words or utterances linguistically.

In Presidential debates, like any other speech, the candidate normally makes constant risings and fallings in the pitch of the voice to yield a certain effect on the targeted addressees. Hence, tonal features of speech can be listed as follows:

1. Fall: this feature may extend from the highest (↗) or mid-pitch of the voice, and fall to the

lowest pitch (↘) to give an impression of finality (Gimson,1962, p. 245).

2. Rise: this feature may extend from low to mid (↘), or from mid to high (↗), to give the impression that something is unfinished.

3. fall-Rise: this feature may be restricted within one syllable (↘↗), it starts at mid-level and

extends rapidly at the same level to the end (Halliday, 1970, pp. 26-27).

4 Rise-Fall: this feature may be strengthened by an initial rise to add an extra length (↗↘), this

Occurs on a long syllable containing voiced continuants (Gimson,1962, p. 247).

5 Level: this feature may appear in a rather restricted context (→) when the speaker utters something

repetitive, monotonous, or boring.

Halliday (1970) assigns seven distinct speech functions to these tonal features, divided into two types: Major and Minor. The 'Major' type includes four functional features expressed in complete sentences including statements, Wh-questions, yes/no questions, and commands. The normal tone for all major features is the falling tone, except yes/no questions which use the high rising tone. The 'Minor' type consists of three functional features including responses, exclamations, and calls (p. 26). These tonal features employ specific levels of pitch to perform two major functions namely lexical and grammatical.

6.2. Functions of the Tone in the 2020 Presidential Debates Utterances

The tone is a distinctive characteristic of the lexemes that affect the meaning of a word. No language is void of variations in the rhythmic pitch of the voice, as part of its sound systems and functions performed by pitch variations. Functions of the Tone, according to Roach (2012), can be divided into three ones: 'semantic tone', 'grammatical tone', and 'emotional tone'. The first function refers to the lexical function of tones, i.e., their ability to distinguish different words; the second function refers to the morphological function, i.e., in distinguishing different forms within the same pattern, and the third function is concerned with special pitch features for sarcasm, surprise, anger, sadness, happiness ...etc. (p.146). One of the tone functions is to reflect the candidate's personal attitudes and feelings or opinions toward the subject matter or his opponent or addressees. It can convey the prosodic meaning of the spoken word, such as: nostalgic, persuasive, assertive, pessimistic, petulant, facetious and derisive tones. English belongs to the non-tonal languages like Dutch and French. Therefore, lexical stress often takes over the role of tone. Therefore, stress patterns or tonic words are used to convey the meaning of words, for example, the segmental structure of two English words may be the same but different word meanings due to different stress patterns or tonics (e.g. project /'prɑ:dʒekt/ as a noun and /prə'dʒekt/as a verb). This word as a noun means 'a task or piece of work'. As a verb, it has numerous meanings as to plan, to throw, or to cast an image on a surface...etc. This stress pattern contains lexical information and used as tones to distinguish word meanings. Consequently, stress and pitch are used by the presidential candidates to express their emotions and attitudes through a change in their intonation, or the tone of voice by making one syllable of a word longer, louder, and higher in pitch. The semantic function of tone is exploited by the two American candidates to enable the targeted

addressees to distinguish between what is uttered and what is meant. In Trump's utterance, "Did you use the word SMART? Trump: 26:35: 1st)", the tone of the word "smart" /smɑ:rt/ gives it a new meaning within the context of the utterance. "Smart?", with a low tone, is a question or a statement, "smart.", with a high tone, is an exclamation of disgust, irony or surprise "smart!" ... etc., All these prosodic meanings are based on contextual factors.

Due to being a stress-timed language, the syllables of English words are stressed at approximately regular intervals. The content words (nouns, pronouns, verbs and adjectives) are stressed, while the function words (articles, prepositions and conjunctions, etc.) are unstressed, and therefore two or three function words together may occupy the same amount of time as the individual stressed syllables of the content words. For example, in Biden's utterance "He started off his campaign coming down the escalator (1:13:39:2nd)". The syllables (hi/st'ɑ:tɪd/ kɑmp'eɪn/k'ʌmɪŋ /'es.kə.leɪ.tər/) is probably stressed and each syllable take up the same amount of time as the three syllables (ɪŋ/ daʊn/ ði /) together.

Secondly, the function of grammatical tone is to convey a sentence meaning by voice restricted to the context of a specific construction or morpheme. This function can mark grammatical categories and grammatical relations defining different morphemes within a language. Grammatical categories include tense, number, gender and noun classes. However, grammatical relations characterize relationships between words and phrases with certain parts of speech in the syntactic structure, as a part of traditional grammar. For example, the -s in the third person singular present tense is agreeing with the subject. Also, the passive construction, as in Biden's utterance "This plan has been endorsed by every major (1:23:11: 2nd), In the active voice, what was previously the object is now the subject, and what was previously the subject is missing or the object of a preposition.(Valin and Lapolla, 1997, p.242). In addition, grammatical tone clarifies that the first syllable of the nouns is stressed, but the verb stress is placed on the last syllable. Thus, stress can have a grammatical function in English. Accordingly, word tone can affect its lexical meaning and its grammatical (morphological) meaning (Ladefoged (1975, p. 256).

Thirdly, the tone is important in signaling various emotions and attitudes when the candidate varies speech intentionally to indicate any category of emotion (Cheang and Pell, 2008, pp. 366–81). To recognize the impact of various emotions on Americans' emotions and attitudes toward the two presidential candidates, some excerpts are drawn from the two candidates' utterances. According to Pittham and Scherer (1993), there

are basic major types of emotional states, and these emotions are communicated to listeners. The key to perceive them is to recognize what functions emotions serve. These emotions are as follows:

6.2.1. Anger and sadness Emotions Through Prosodic Features in the 2020 Two Debates

These two emotions are characterized by the high rate of tone to realize an accurate identification as the following utterance: “My son, My son, My son, like a lot of people... (Biden: 1:10:50:1st)”.

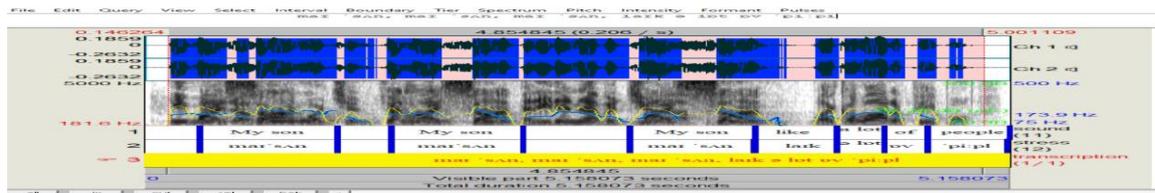


Figure (2): Anger and sadness emotions prosodized by Biden’s tone.

The waveform of Biden’s in figure (2) has two analyses: 1. pitch ‘the blue curve’, which is a symbol of the periodicity of the waveform at each instant, superimposed on a spectrogram. The spectrogram is a representation of the frequency content of the waveform at each instant under, 2. Button-like rectangles with numbers above the waveform and below the analyses is to indicate which part of the sound is visible, which part is selected, and what the remaining parts are. The spectrogram is the greyscale image below the waveform. The viewing range here is from (75 to 500) Hz.

In the figure above, the utterances depicted here are totaling (12) syllables, including ‘of’ /v/. The three tiers have already been edited on the right as (sound-stress-transcription). This is to visualize and perceive features of Biden’s sound. The time range of this utterance’s selection ranges from (0.146264 to 5.001109 seconds), (duration: 4.854845 seconds). The blue line in the spectrogram, representing pitch (fundamental frequency (F0) or (tonality), shows that the utterances are carrying high rise tones like syllable (son), [sʌn], which is related to the strong emotion of anguish, anger and sadness. Pitch here serves as an important cue for tone, lexical stress, and intonation. High Tones of an accurate identification identify different emotional states of anger and sadness. Moreover, this yellow line represents Biden's intensity in his utterances on the spectrogram and shows that the intensity is marked by darkness of the bands in the waveform to highlight the height of the peaks in these utterances. Intensity is measured in decibels (db). The intensity of

the sound indicates how strongly the message Biden strives to convey to the addressees.

Accordingly, the pitch of this utterance is at its maximum: (228.706) Hz, and the mean pitch is (173.9) Hz, while the intensity of the stressed word (son) has a higher intensity than the unstressed others. The intensity of this utterance is at its maximum (72.02810903111272) dB. High-intensity values are usual for strong emotions, such as anger and sadness. This tone of anger and sadness is assured by repetition of the utterance, 'My son' three times. These emotional states of anger and sadness via a high rate of tone are conceived by the addressees and reflected evidently when Trump exposes the history of drug addiction of Biden's son, Hunter, who was discharged from the Navy in 2014. Physically, Biden's speech signal is a series of pressure changes in the medium between the sound source (Biden) and the addressees, represented by the waveform. Here, time shows the horizontal axis from left to right, while pitch shows the rise and fall of the pressure in the signal. A peak is observed on the first syllable of the word 'son' in the three utterances of the continuous sequence. Then a fall is observed on the other two syllables of the word 'son' in the three utterances of the continuous sequence.

In figure (3), Trump satirized contemptuously with a winked roll of the eyes, Biden's dead son. Biden scolded Trump for referring to America's deceased soldiers as "losers" in his utterances "He was not a loser. He was a patriot (1:13:1st).

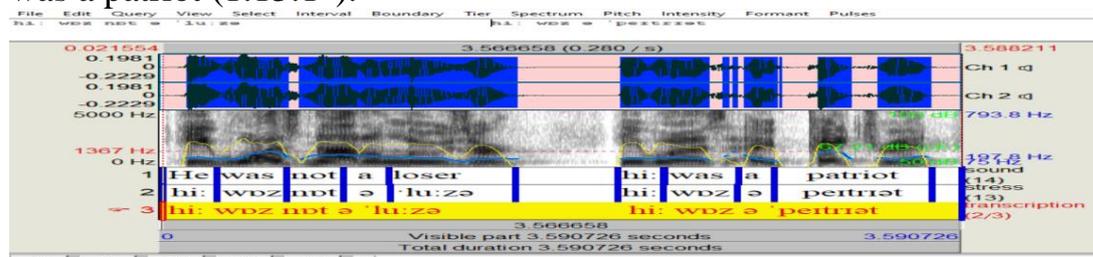


Figure (3): Anger and sadness emotions prosodized by Biden's tone.

In this figure, the speech utterances portrayed here are totaling (13) syllables, including 'a' /ə/. Biden's sound total duration is at (3.590726). These utterances are carrying high rise tones such as (was not) / (wɒz nɒt) / and (patriot) / 'pætriət/, which are associated with the strong emotion of anger and sadness. Accordingly, the time range of this utterance's selection ranges from (0.021554) to (3.588211) seconds. The pitch is at its maximum: (271.232) Hz, and the mean pitch is (197.8) Hz. The intensity of this utterance indicates word stress / ə 'lu:zə /and /ə 'pætriət/. The intensity of this utterance is at its maximum 75.05306245539542 dB. This utterance also reflects and deepens the attitude of nostalgia.

6.2.2. Fear Emotions Through Prosodic Features in the 2020 Two Debates

This emotion is characterized by medium tone to realize an accurate identification of these two emotions

as follows:

“Yes, there is a systemic injustice in this country (Biden: 54:38 1st).”

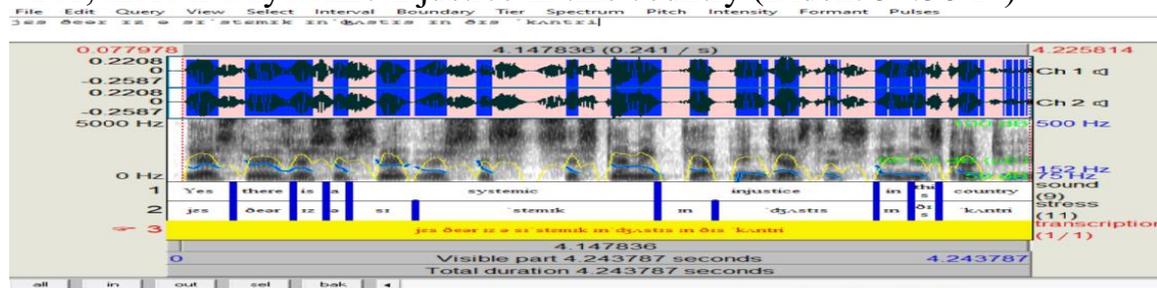


Figure (4): Fear emotions prosodized by Biden’s tone.

The time range of this utterance’s selection is from (0.077978) to (4.225814) seconds (total duration: 4.243787 seconds). The pitch of this sound is at its maximum (220.786) Hz. The intensity indicates word stress /sɪ'stemɪk /and /ɪn'dʒʌstɪs/ at its maximum of (75.05306245539542) dB. In this utterance, Biden repudiates white supremacy and calls for racial justice. He denounces the “injustice racism” so this cry for racial justice becomes a majoritarian issue. Obviously, there is a speech disorder or stuttering of pronouncing “systemic injustice.” This may date back to verbal blunders on the debate stage or a key moment of rooting out systemic racism. The feeling of fear is embodied when Biden overlaps and stutters between two succeeding utterances “systemic injustice”. This emotion is characterized by the medium tone at its maximum (220.786) Hz, and the mean pitch (152) Hz. This medium tone realizes an accurate identification of fear, and intimidates the targeted addressees from choosing Trump for the second term. Consequently, the Americans vote for him as president.

6.2.3. Happiness Emotions Through Prosodic Features in the 2020 Two Debates

Trump expressed his sweeping victory with another term of the presidency by uttering: "We won the election, and we have the right (Trump 3:35:1st)". By uttering this response, Trump expresses his confidence and happiness to be re-elected by the Americans because he well-deserves that victory.

Prosodic Features of the 2020 U.S. Presidential Debates

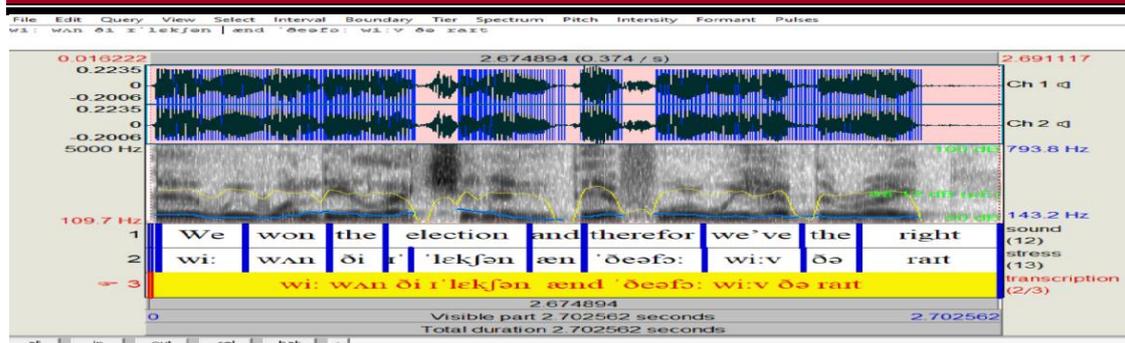


Figure (5): Happiness emotions prosodized by Trump's tone.

In this figure, the speech utterances depicted here is totaling 12 sounds and 13 stress syllables, including /ɪ/ in election. Trump's utterances total duration are (2.702562). The tonality shows that the utterances are carrying happy emotions of expected winning of the election, Therefore, medium tone of accurate identification, such as (wʌn ði ɪˈlɛkʃən) and (hæv ðə raɪt) are realized through the intensity of Trump's utterances. The pitch is at its maximum: (205.565) Hz, and the mean pitch is (143.2) Hz. The intensity of this utterance tells us that word stress /ɪˈlɛkʃən/ and /ˈðeəfɔ:/ have a higher intensity than the unstressed syllables. The intensity of this utterance has its maximum (73.47988884858097) dB. Medium intensity values are typical for positive emotions like happiness.

6.2.4. Disgust and boredom Emotions through Prosodic Features in the 2020 Two Debates

These two emotions are characterized by a low degree of accurate identification as follows:

the president Trump ridiculed Biden's past history by saying "there's nothing smart about you (27:24: 1st)".

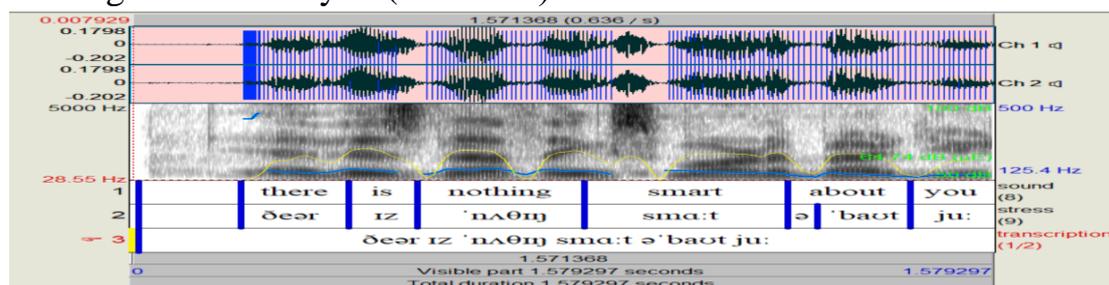


Figure (6): disgust and boredom emotions prosodized by Trump's tone.

In this figure, the speech utterances echoed here is totaling (8) sounds and (9) stress syllables, including /ə/ in /about/. Trump's utterance total duration is (1.579297). The pitch curve shows that the utterances conveying disgust and boredom emotions are characterized by the low rate of precise identification. Therefore, low rate of precise identification

tones such as /'nʌθɪŋ smɑ:t/ is realized through the intensity of Trump's utterance. The pitch is at its maximum: 212.693 Hz, and the mean pitch is (125.4) Hz. The intensity of this utterance has its maximum (70.68145815327442) dB. This range is typical for passive emotions like disgust and boredom.

Another utterance expressing these passive emotions is uttered by Biden as follows:

“When?... Inshallah? (Biden: 39:05:1st)”.

In this utterance, Biden used a ubiquitous phrase that is familiar to speakers of Arabic language: Biden interjected “Inshallah”, meaning 'God willing' in Arabic to hedge on Trump's saying “he would release his tax returns”. In this figure below, the speech utterance represented here is totaling (6) sounds and (7) stressed syllables, including ‘a’ /'a/

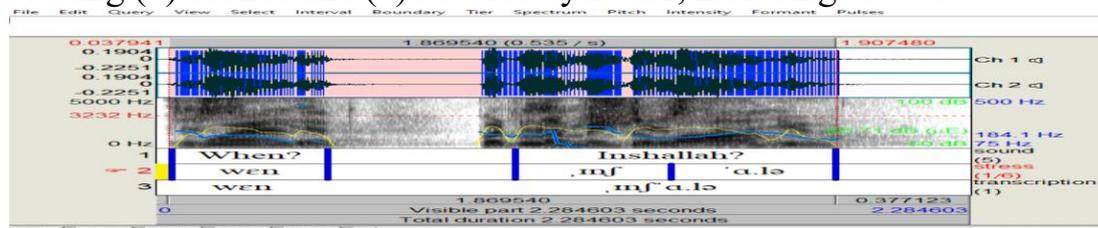


Figure (7): disgust and boredom emotions prosodized by Biden's tone.

Biden's sound total duration is (2.284603). Fundamental frequency (F0) shows that the two utterances are carrying low tones, such as (wen) and (ɪnʃɑːləʃ) which are related to the emotions of disgust and boredom. These two emotions are characterized by the low rate of accurate identification. The intensity of Biden's utterance shows that the intensity of this utterance is (72.86108877034108 dB). The tonality of these given utterances is low-pitched sounds indicating slow oscillations. Accordingly, the maximum is (447.241) Hz, and the mean pitch is (184.1) Hz. This range is identified for passive emotions like disgust and boredom to be sensed by the addressees.

To conclude, the pitch range of an utterance may be higher, medium, or lower, according to a particular tone under the influence of the emotion, which the candidate aspires to convey to his targeted addressees. These prosodic features are sensed by the targeted addressees to make their decisions based on the emotional effect of the situation, for example: positivity, negativity, or neutrality in the way an addressee grasps (Pell, 2005, pp.193–215).

Moreover, these tones can be realized by voiced segments and, most frequently manifested on vowels for example, short vowel sounds (monophthong) e.g., (/ʌ/ in [sʌn] (F.2), /ɒ/ in [wɒz/ nɒt],/ u/ə/ in

[ˈluzər] (F. 3), /ɪ /in [sɪˈstɛmɪk] (F. 4), /ɪ/ɛ /ə/ in [ɪˈlɛkʃən] (F.5), and /ɪ/ɑ/ ə/in [ɪnʃˈɑ.lə] (F.7), and long vowels (diphthong), e.g., /eɪ/,/ɪə/ in [ˈpeɪtriət] (F.3), /æ/ in [hæv], /aɪ/ in [raɪ] (F.5), /ɑ:/ in [smɑ:t] (F.6). That is why the nucleus or peak, which is the central part of the syllable is the maximum of cases of a voiced vowel, and is appropriate as the bearer of tone (Roach, 2012, p.130). Moreover, there is a connection between vowel height and fundamental frequency: the higher the vowel, the higher the pitch (Trask, 1996, p.150).

6.3. Functions of a Tonic Syllable in the Two Presidential Candidates' Utterances

A tonic syllable is one that carries a tone composed of one tone-unit. It has a high degree of prominence, which is a property of stressed syllable called tonic stress “nucleus” or “nuclear” stress. (Roach, 2012, p.145). The notion of stress means that some syllables are pronounced more strongly and loudly than others. Furthermore, tonic syllables are phonological units arranged hierarchically, so speech consists of many utterances. An utterance is a grouping of words together. Each utterance has one or more tone-units. Tone units are segments of speech with a single intonation contour. They are characterized by a pause at the beginning and an upward pitch shift, as well as a longer final syllable (Du Bois et al, 1992, p.17).

Some utterances are drawn on the two candidates' utterances to demonstrate their tone units, as follows:

In (1) utterance, a tone unit consists of a single syllable ‘outside’. This is the tonic syllable, and in these cases, a falling intonation is indicated by (ˆ). In (2) utterance, there is a head preceding the tonic syllable ‘Keep yapping’. ‘Keep’ is stressed, so it is the start of the head. In (3) utterance, the tonic is ‘years’, the head is ‘period of three and a half’, and the pre-head is ‘in a’. It is noticeable that there are no stressed syllables in the pre-head. In (4) utterance, the tonic syllable is ‘healthcare’ followed by a tail ‘Not a thing’. Some syllables follow the tonic syllable in (5) utterance ‘Well’. The tail is defined as any syllable between the tonic and the tone-unit's end.. That is why a special symbol (·) or a raised dot is used to mark stress in a tail.

1. | \ Outside| (Trump: 30:44^{1st}).
2. | 'Keep yapping \man| (Biden:16:57:^{1st}).
3. | in a ' period of three and a half' \years | (Trump: 1:06:19: ^{1st}).
4. | He hasn't 'done a thing for anybody on \healthcare Not a thing (Biden: 24:04:^{2nd}).
5. |Well, him ·too| (Trump: 48:34:^{1st}).

Each utterance above, from (1) to (5), has a distinctive tonic syllable. These tonic syllables enable the addressee in order to detect a significant change in the pitch of voice within a tone unit. Furthermore, the presidential candidate can change the tone unit's tonic syllable to emphasize different meanings of each utterance, which is perceived by the addressee as the different emphasis on each unit.

For example, the tonic syllable 'healthcare', in utterance (4) has a prominent rising. This rising tone indicates that the utterance 'healthcare' carries more significance than the other utterances. The other syllables, on the other hand, are usually less significant. The syllable carrying a tone is called a tonic syllable, so as to function as emotional states and attitudes on the part of the two candidates to enable the addressees to recognize the message contained in these prosodic features of tonic syllables. These can help the addressees recognize the attitudes of Trump and Biden towards the Covid-19 pandemic, the Supreme Court, a referendum on record, healthcare, and race. These distinctive tonic syllables contribute to identifying intended meanings of utterances employed by the two presidential candidates consistently.

Moreover, the structure of the tone unit serves a communicative function for the two candidates to reflect various prosodic features of the emotional states and attitudes' utterances in the 2020 American presidential debates. This structure of the tone unit consists of four parts: Head which includes all stressed syllables except tonic syllables, Pre-head which includes any unstressed syllable that occurs before the head; the tail, which includes any unstressed syllables that occur after the tonic. Roach (2012) outlines this structure as follows:

(PH) (H) TS (T)
(pre-head) (head) tonic syllable (tail)

Accordingly, There is only one tonic syllable in a tone-unit. A head (H) follows a stressed syllable after the tonic syllable. Therefore, a stressed syllable must be present before the tonic syllable to qualify as a head. In a tone-unit, the pre-head (PH) comprises the unstressed syllables before the first stressed syllable, whereas the tail (T) comprises the syllables between the tonic syllable and the end. Moreover, each tone-unit has an initial tonic syllable (pp.131-132).

Tones are employed by Trump and Biden, either 'level' or 'moved', and these tones are chosen, based on how the two candidates aspire the utterance to be realized by the addressees. The following excerpt, stated by Biden from the 2nd debate, illustrates this fully. It is necessary to mark the places in longer stretches of speech where tone unit boundaries occur. There may be silent pauses between the tone-units or may not. These

pause-type boundaries are shown by dual vertical lines like this (||), and non-pause boundaries with a single line (|):The below structure can be marked as follows:

(PH) (H) TS (PH) TS (PH) (H)
 ||So then: 'they have to : fire || firefighters : teachers | first responders| 'law
 TS (T) (H) TS (T) (PH) (H) TS
 en: for:cement: 'officers, so 'they could : keep: their cities || and: 'counties
 : running|| (Biden: 28:13^{2nd}).

The above utterances contain five tone-units. In the third tone-unit, the tonic syllable carries the sound, not the word.. The word ‘enforcement’ is divided into three parts, 'ɪn', 'fɔ:'and '.smənt'. This clearly shows that the units of phonological analysis may sometimes differ from those of grammatical analysis. To convey the message of nostalgia contained in these tone-units, the syllables in the tail reach the highest pitch successively. It is also noteworthy that the falling tone continues at this level, because the candidate's lowest pitch occurs at the bottom level before the tail ends to enable the addressees to identify the nostalgic attitude contained in these tone-units.

7. Characteristics of Intonation in the Two Presidential Candidates’ Utterances

Intonation has characteristics that are distinguished from other prosodic features. A falling intonation provides meanings such as 'statement' or 'complete thought', whereas a rising intonation denotes

meanings such as 'question' or 'incomplete thought'. In spoken language, an intonation is the rise and fall of the pitch of the voice, so it is a linguistic feature of utterances (Tench, 1996, p.1). It is about how we say things not what we say. Written punctuation is equivalent to vocal intonation and stress (Roach, 2012, p.129). This prosodic feature can convey other types of information of the lexical meaning of utterances to convey the messages of the 2020 American presidential candidates and to add an extra variety to the way words are used such as questioning, exclamation, anger, affection, politeness, surprise, interest, boredom, gratitude, etc.

Halliday (1967) points out that English intonation is based on three aspects:

1. Dividing speech into units.
2. Underlining specific words and syllables
3. selecting the contour of the pitch movement (e.g., falling or rising) (p.8).

In addition, Wells (2006) identifies these three aspects as "the three T's" i.e., tonality, tonicity and tone (p.9)”. Roach (2012) clarifies that there are

two main basic patterns of intonation in spoken language: 1. Falling intonation is represented by a downward arrow (↘). It is frequently used in (statements, commands, wh-questions, assertive question tags, and exclamations. As the tone falls, it descends from a higher pitch to a lower pitch. In contrast, the rising tone (↗) is a move from a lower pitch to a higher pitch (p.121). Therefore, Candidates choose tonal expressions as per how they want the utterance to be expressed. Nevertheless, each candidate has his own normal pitch range either a top-level or a bottom level. In situations where strong feelings are conveyed, presidential candidates function extra pitch height to emphasize their opinions.

Accordingly, Roach (2012) proposes five levels of intonation that encapsulate the spoken language. The vertical arrow symbol indicates extra pitch height.

1. The fall (↘) gives an impression of “finality” to signal there is no interest in continuing with that topic.
2. the rise (↗) Invokes further action or an invitation to continue.
3. fall-rise (↘↗) indicates “a limited agreement” or “response with reservation “or “hesitation.”
4. rise-fall (↗↘) conveys a strong feeling of approval or surprise.
5. level tone (→)conveys a feeling of routine. Uninteresting or boring (pp. 145-148).

7.1. Functions of intonation of the Two Presidential Candidates’ Utterances

The functions of intonation are centralized in distinguishing types of sentences based on their form (statements, questions, commands, requests, exclamations)and dividing sentences into sense groups to allow speakers to express their various emotions. Moreover, intonation patterns help update syntagms in oral language, i.e. a set of words that has both semantic and syntactic meanings ⁽²⁾. A presidential candidate can, therefore, communicate his or her message to the addressees in an appropriate way by using intonation. There are two main functions of intonation. They are attitudinal functions and syntagmatic functions.

7.1.1. Attitudinal Function Demonstrated by the Two Candidates

This function enables the two presidential candidates to express feelings and attitudes during speaking, and this gives a special meaning to their speech. The attitudinal function of intonation is employed by the presidential candidates to convey their feelings and attitudes such as anger, happiness, gratefulness, boredom, determination, optimism...etc. Unless the presidential candidates understand the main purpose of the

appropriate way of intonation, this may unintentionally give offence and misjudgment. This attitudinal function can be analyzed through three factors as Roach (2012) underscores:

1- a large number of sentences with different intonation patterns between head and tone to make the

addressee detect the communicative attitudes supposed to correspond to the intonation. Consequently, the utterance 'Covid' has been repeated in the two debates about seventeen times with different intonation patterns. Biden uses this utterance about fourteen but Trump only three times. This repetition echoes the attitude of Biden concerning the Coronavirus pandemic.

2- a vast range of available adjectives can make the addressees decide to label the different attitudes

expressed. Therefore, dysphoric labels by Biden against Trump, such as 'malarkey, dog whistle, marauding, thug, xenophobic, coyote, and horrible', create an irritating atmosphere of feelings of fear, anger, sadness, fluctuation and other emotions to the targeted addressees. This vast range of available adjectives and naming undoubtedly have a catastrophic influence that contributes to identifying the intended meanings of Biden against choosing Trump as president.

3-variation in loudness and speed by different voice qualities, such as pitch between high and low, facial expressions, as well as gestures and body movements, are critical in understanding the meaning of words to convey feelings and attitudes (Roach, 2012, pp.148-149). These factors are related to intonation by distinct three types of prosodic variables:

a. Sequential of Intonation Components such as:

A-Pre-heads, heads, tonic syllables, and tails, as well as their pitch possibilities.

b- Pauses

c. Boundaries between tone- units

b. Prosodic Features

In speech, these components are present and observable constantly, such as:

1- width of pitch range 2-key 3-loudness 4-speed 5-voice quality.

These factors are relative to "background speaker characteristics".

c. Paralinguistic

These components involve facial expressions, gestures, and body movement, in addition, vocal effects (laughs, sobs and anguish) of speaking. Although these components do not come within the scope of intonational functions, they can be recognized via:

1. Fall (to express finality and definiteness) such as:

it's just fake ↘news (Trump: 19:54: 1st)

That is absolutely not ↘true (Biden 47:56: 1st)

we're going to stop ↘fracking (Trump: 49:13:2nd)

Falling intonation employed by Trump in utterance 'it's just fake ↘news', asserts his attitude towards Coronavirus. In utterance, 'we're going to stop ↘fracking' Trump attempts to communicate his attitude of being against fracking to capture the emissions from gas. However, Biden's utterance, 'That is absolutely not ↘true' confirms the lies of Trump to the addressees about economic recession and recovery.

2. Rise (related to grammatical function):

The functions associated with rises tend to be more grammatical than attitudinal, as demonstrated by the following excerpts:

General question Can you ↗go back 30 seconds? (Biden: 1:09:23: 1st).

Listing They need to deal with smaller ↗classes, more ↗teachers, more ↗pods, and he's refused to support that ↗money (Biden: 21:25: 2nd).

Encouraging prepared to let people ↗vote (Biden: 1:22:41:1st).

By using rising tone, the two candidates attempt to influence their addressees to identify intended meanings of their utterances. Therefore, the addressees can recognize the message contained by rising intonation.

3-Fall-rise

Uncertainty-doubt) ↘May I res↗pond? (Biden: 26:10: 2nd).

Requesting Will you re↘member that ↗Texas? (Trump: 01:29:30: 2nd).

4. Rise-fall

Surprise there's ↗nothing smart about ↘you (trump: 27:24 1st)

being impressed You are the ↗worst president ↘America's ever had (Biden: 41:00 /1st)

7.2. Syntagmatic Functions of Intonation Demonstrated by the Two Candidates

Three functions are included in this group: accentual, grammatical, and discourse functions.

a. Accentual Function Demonstrated by the Two Candidates

By using this function, candidates can emphasize syllables that are to be perceived as tonic syllables. Consequently, the tone-unit emphasizes the word for which it belongs (Roach, pp.172-173).

The intonation of an accentual function is carried exclusively by the stressed syllables in a tone-unit. This syllable is located at the last lexical

position (for example, nouns, adjectives, verbs, adverbs) to represent normal placement or contrastive. However, any word may become a tonic syllable. For example, a) represents normal placement and b) its contrastive as follows:

a) |He 'doesnt want to 'calm ↘things down | (Biden 1:03:39:1st)
(the word 'down', being a preposition and not a lexical word, is not stressed.)

b) |You 'dont 'know the 'law ↘**Joe**| (Trump: (1:3:51:2nd)

In (b), contrasting item 'Joe' is given tonic stress because it contrasts with 'Trump' in the stimulus utterance. Almost all other syllables in the utterance are stressed similarly.

a) | he 'calls the 'radical 'Green ↘New **Deal** | (Biden: 1:23:01:1st)

b) |Nobody has 'done more for the ↘↗**black** 'community than 'Donald 'Trump| (Trump: 01:15: 2nd).

Tonic syllable is of considerable linguistic importance, it is emphatic. In tone-units, stress does not mean contrastive or tonic syllables accented at the end of the last lexical word, but it could also mean placing them earlier in the tone-unit, if the last part of the tone unit has already been uttered, "given," in other words, mentioned or predictable, as the following utterance illustrates:

a) |I 'got very 'lucky **I'm** 'going to 'get very lucky | (Biden: 13:05:1st).

The tone-unit 'get very lucky' is a given utterance, so stress here is placed earlier on the utterance 'going to'. Biden emphasizes the difference between Trump and himself. Here, stress is also used with the pronoun 'I'.

For the purpose of emphasis, the tonic stress may be placed in another position to render two purposes:

a) non-emphatic, for example:

|you were 'very ↘late on the draw| (Trump: 8:36 1st)

Trump emphasizes something, so he changes the stress from the principal noun 'draw' to other content utterances such as the adjective '**late**', /leɪt/, intensifier '**very**', /'veri/. This emphasis calls attention to the extraordinary nature of what Trump wants to indicate the focus of the information.

b) emphatic for example:

|I 'mean '**literally** ↘think about it| (Biden: 28:40: 1st).

In this utterance, there is an adverb '**literally**', /'lɪtərəli/ which is used to emphasize utterances that receive emphatic stress. Biden, in this utterance, provides a means of distinguishing levels of emphasis. Leech and Svartvik (1975) point out that some intensifying adverbs and

modifiers (or their derivatives) such as (awfully, terribly, really, definitely, literally, extremely, surely, completely, entirely, very, only, own, -self) are emphatic by nature (p.135).

Practicing on placement of stress within this utterance is essential since the same utterance can take different meanings depending on where Biden chooses to place the primary stress, e.g.

1. I mean literally think about it, meaning (1) not (you), but perhaps (he) or (she).

2. I **mean** literally think about it, meaning (2) to have in the mind as a purpose not to be oblivious to.

3. I mean **literally** think about it, meaning (3) Biden thinks about something actually not figuratively or metaphorically.

4- I mean literally **think about** it, meaning (4) to have a belief or to consider it, not 'to reject or avoid.

5. I mean literally think about **it**, meaning (5) 'it' here means virus COVID-19, not other takeaways of the debate

b. Grammatical Function Demonstrated by the Two Candidates

Cruttenden (1997, p. 68), and Aitchison (1994. pp.136–9) point out that intonation has a number of perceptually relevant functions. These functions contribute to the recognition and understanding of perceived speech. Accordingly, the addressees can recognize and perceive the grammatical and syntactic structure of what is being uttered. This process realizes its scope by a) using the information expressed by the intonation, b) There are boundaries between phrases, clauses, and sentences to assist the addressees to recognize the intended meanings, c) it is important to understand the differences between the four different types of sentences, i.e., declarative, imperative, interrogative and exclamatory. Furthermore, variation of intonation can assist in removing ambiguity, when multiple meanings overlap, for example:| This is a 'president who has 'used everything as a 'dog ↗whistle| to 'try to 'generate 'racist 'hatred, 'racist di'vision| (Biden: 51:21:1st).

This utterance can be illustrated as follows:

- The phrase 'a dog whistle' is ambiguous because it can be paraphrased and interpreted as more than one meaning, according to its context. This phrase means a high-pitched whistle used to train dogs. This is the lexicological definition, or it means a subtly aimed political message which is intended for one with attitudes of racism or hatred and this understanding can only be perceived by a particular community.

Biden in the first debate uses this appealing language to get most Americans to stand with him.

- If the grammatical intonation is placed over ‘DOG WHISTLE’, then Biden suggests the double meaning of the phrase to degrade Trump, and attempt to communicate specific meanings to intended addressees.
- If he accented the word PRESIDENT, then he intends to focus attention on the person of the president.

Addressees are exposed to perceive a tone-unit boundary between grammatical units of higher order on the level of the sentence rather than words as follows:

| I 'dont know Beau I know ↗Hunter| Hunter ↗got thrown out of the 'military| (Trump: 1:11:24: 1st).

In the utterance above, there are two grammatical units (I don't know Beau I know Hunter) and (Hunter got thrown out of the military). Trump places a rising tone over the name (Hunter) to communicate specific meaning as Trump intends Hunter not Beau, and there is also a rising tone on the phrase (got thrown out) because Trump intends to emphasize Hunter's firing of the military.

In the same vein, tone-unit boundaries can also be observed at phrase and clause (sentences with a more complex structure). boundaries as follows:

|In most ↗states| except 'governors who want to ↗deny |'people are poor↗Medicaid| (Biden: 11:37: 1st).

In Biden's utterance, there are two phrases encompassed by tone-unit boundaries (In most states/ except governors who want to deny) and a sentence (people are poor Medicaid). Rising tone is placed over the two utterances (deny) and (Medicaid) to communicate as specific meaning of these utterances, as Biden intends to draw the attention of the addressees to the process of denying of governors and Medicaid for poor people.

Moreover, both candidates employ the prosodic feature of intonation to distinguish between a) restrictive and b) non-restrictive relative clauses as follows:

|I'm the 'guy who ↗brought back the 'automobile 'industry| (Biden45:1: 1st).

|The ↗general| who was with him| said he 'only all he' ever 'wants to do is di'vide 'people| not un'ite ' people at all| (Biden: 54:14:1st).

The first utterance means that the guy, 'Biden' is someone that brought back the automobile. Intonation in this sentence limits or identifies such 'guy' and this guy can not be removed from the utterance without

changing its meaning. However, the intonation, in the second one, provides additional information and optional descriptions, so the phrase 'who was with him' can be emitted from the utterance without altering its meaning or structure. Relatedly, in the first utterance, the emphasis is laid on the phrasal verb (brought_back) while the rising tone, in the second, is on the subject (general).

Similarly, intonation can convey a grammatical significance to the tonic syllable tone. This happens when the rise of the tone alters from falling into rising to change a statement into a question.

| 'Really You 'talking a 'bout ↗ 'Hunter | (Trump: 1:11:09: 1st).

In this utterance, Trump lays heavy stress on the name (Hunter) to express his satire and ridicule of Biden's son. It is noticeable that rising tone is usually marked with questions starting with auxiliary verbs, whereas a falling tone is used with (wh-question words), such as:

| 'Did you 'see whats ↗ 'going on| (Trump: 1:27:1st).

The rising tone in this yes-no question communicates to the addressees that Trump expects confirmation from Biden to show Biden's disqualification to be America's president. However, the wh-question below is usually marked with a falling tone to elicit an appropriate reply from Biden:

| 'Why do you 'keep 'coming ↘back| (Trump: 01:8:22:2nd).

In addition, the two presidential candidates employ the intonation of question-tags to cause a difference in meaning. If there is a falling tone, the candidate exhibits his certainty that the information is accurate, and it is simply awaiting confirmation. While if there is a rising tone, it carries uncertainty, so it indicates a request for information.

The two utterances below show that:

a) |That was a 'really pro'ductive 'segment| ↘wasnt it| (Biden: 17:16: 1st)

b) | It was just a 'little while a 'go| ↗ right| (Trump: 48:43: 2nd).

In (a) utterance, Biden exhibits his certainty that his information or point of view is right about Trump's segments on whether or not Trump supports either ending the filibuster or packing the court.

Biden attempts to show that Trump is actually hilarious, so he expects confirmation. In (b) utterance, Trump's rising tone carries uncertainty about affordable health care on the part of Biden, so his utterance indicates a request for information. Trump raises his tone to attract the attention of the addressees to make them assure that Biden is only a filibuster.

c. Discourse function of intonation Demonstrated by the Two Candidates

This function enables the presidential candidates to indicate to their audiences which information they see as 'new', and which is already 'given' when indicating a contrast or link with other tone-units. (Roach, 2012, p.146). The two presidential candidates utilize this function of tone stress so as to direct the attention of the addressees to the most important elements of a message by placing it on an appropriate syllable of a specific word within a tone unit. The discourse of political presidential speeches inevitably contains several references that presuppose shared knowledge. This implies the three parameters used to specify the context of the situation in which language is used. These three parameters (field, mode, tenor) are taken together to enable the addressees to characterize the situational context appropriately (Halliday and Hassan, 1994, p.22). Intonation can specify whether or not the information is new or already known, a candidate's dominance, and the opportunity for addressees to participate in the debate (Brazil, et al, 1980). (Brazil, et al, 1980). The excerpt below elucidates the discourse function of intonation:

Well I've spoken to the companies, and we can have it a lot sooner. It's a very political thing because people like this would rather make it political and save less. It is a very political thing I've spoken to Pfizer; I've spoken to all of the people that you have to speak to, we have great Moderna, Johnson and Johnson, and others. They can go faster than that by lot. It can become very political because the left or I don't know (Trump: 23:24” 1st).

Each utterance, in this excerpt, can be analyzed grammatically, lexically, and for discourse markers. Evidently, these utterances constitute part of a larger context of interaction between the participants in the presidential debate. These utterances assume a shared knowledge of several references (e.g., people like 'this' implies that the speakers and addressees know which 'this' is being spoken about, it is 'the Covid-19 vaccine'), and meaning can only be understood with the help of background knowledge. or shared information among the participants in circumstances of the event, which specifies the context of the situation in which language is used. Accordingly, Trump initiates his turn by uttering the discourse particle 'well'. This marker is a 'linking utterance' described as the 'glue' that binds together a piece of speech to connect, organizes and manages what Trump says, or to express his attitude or mark a change in the focus (Schiffrin, 1988, p.102).

The analysis of particular personal pronouns of this excerpt exploited by Trump runs as follows (I - we - it -you - They). Such use of these

personal pronouns assists the candidates to connect themselves with their fellows and addressee (Obeng, 2002, p.164). Crystal (1995) describes the personal pronoun as a grammatical form of speech that refers directly to the speaker (first person), the addressee (second person), or others involved in the conversation (third person). (p. 47). In Trump's utterance, the first-person singular pronoun refers directly to him whereas, Trump and the white house administration are referred to by the first-person plural 'we'. As Jones and Wareing (1999) note, the first person singular clearly defines responsibility, while the first person plural ambiguously defines responsibility (p. 46). However, the use of the personal pronoun 'you' refers to Biden's entourage who work for the Covid-19 reserves or others involved in the event. The third person singular 'it' refers to the Covid-19 vaccine. The third person plural 'they' refers to the companies of 'Moderna, Johnson and Johnson, and other companies working for covid-19 research. Thomas (1995) claims that it is difficult to assign a precise referent to any statement that contains a third person pronoun (he, she, it, they). (p.10).

Moreover, the intonation of discourse can be identified by two main perspectives taken into consideration. Firstly, to make the addressees pay more focus on attitudes of the message intended by placing the tonic stress on the appropriate syllable in a word, as in:

[It is a 'very po\↗litical thing]

In this discourse, tonal stress or information content is given to the word 'political's second syllable as the most important utterance. The addressees recognize well that this word carries high information content to be emphasized. The falling tone indicates new information, while rising or falling rising tones indicate given or shared information. In addition, intonation can assist in presenting information and, thus, focus attention. The other tone –unit of speech is treated as intonationally subordinate (Roach, 2012, p.158). Accordingly, As Pierrehumbert (1975) points out, intonation can be understood by unravelling the various contributions made by linguistic and paralinguistic systems in interpretations of many utterances. (pp. 61-62).

The prosodic characteristics, according to (Roach, 2012) this excerpt contains the following prosodic characteristics: 1- reduced pitch range, 2- increased speed, 3- narrower pitch range, and 4- lower loudness (p.158). Secondly, the intonational discourse function is the regulation of debate behavior. The sequence of tone units in the speech of the candidate can convey information discerned by the intonation of the debate interaction, as a restricted kind between two presidential candidates and the moderator, then the addressees. Speaking can be identified by the way a

candidate interacts, for example, by questioning, offering advice, advising, challenging, encouraging, approving, disapproving, etc. In addition, prosodic components are used in various ways by candidates to indicate the completion of their speech, the need for another candidate to speak, the need for a particular response, etc. Additionally, rising and falling intonations on question tags are meant to convey what response the speaker is expecting from the 'key', the pitch range used to signal or regulate turn-taking. (Roach, 2012, p.159). Finally, this function is utilized by the two candidates to signal to their targeted addressees how sequences of their utterances go together to contrast or to cohere. By doing so, the addressees can be able to understand the core meaning of the candidates in an appropriate manner. Consequently, the addressees can figure out the message contained in the prosodic features utilized by the two presidential candidates.

8. Qualitative and Quantitative Analysis of Respondents to the Two U.S. Presidential Debates.

There are some polls conducted to survey the addressees' responses during and after the two debates. One of them was conducted by Data for Progress to survey the first presidential debate. This poll affirms that Democratic nominee Joe Biden is expected to be the forthcoming president. This survey includes two questions: The first is "Who do you think won the debate?" and the second question is "Which candidate comes off as more Presidential to you during the debate? The responses to the first question are as table (1) below illustrates:

Response	Topline	Democrats	Independent/Third Party	Republicans	Female	Male	Under 45	45+	No College	College	American Indian or Alaska native	Asian	Black or African American	Hispanic or Latino/a	Other Race	White
Democrat (Biden)	52	90	47	14	55	49	52	52	52	52	70	63	86	72	59	44
Republican (Trump)	39	6	35	78	33	46	39	39	38	40	24	26	11	13	19	48
Not sure	9	4	19	7	12	5	9	9	9	8	5	11	3	15	22	8
Weighted N	1544	619	363	562	819	722	571	973	941	603	10	55	175	129	35	1140

Table (1): Responses to the first question "Who do you think won the debate?"

The results of the first question which reads: "Who do you think won the debate?" explain the results of table (1) and table (2). It is enough to clarify only *Topline* analysis to recognize the influence of employing prosodic features beyond these two presidential debates upon the addressees.

Topline: According to the poll sample, the " Democrat Joe Biden" obtained (52) of the sample votes, while the " Republican Donald Trump" obtained (39) of the sample votes, and finally there was a number (9), from the sample members who were not sure, with a mean vote (33.33) and a standard deviation (22.052). As shown below in table (2), the

descriptive measures of sample opinions are listed to reflect those of the previous results.

Descriptive Statistic Analysis					
	N	Minimum	Maximum	Mean	Std. Deviation
Topline	3	9.00	52.00	33.33	22.052
Democrat	3	4.00	90.00	33.33	49.084
Independent / Third Party	3	19.00	47.00	33.66	14.047
Republican	3	7.00	78.00	33.00	39.128
Female	3	12.00	55.00	33.33	21.501
Male	3	5.00	49.00	33.33	24.583
Under 45	3	9.00	52.00	33.33	22.052
45+	3	9.00	52.00	33.33	22.052
No College	3	9.00	52.00	33.00	21.931
College	3	8.00	52.00	33.33	22.744
American Indian or Alaska Native	3	5.00	70.00	39.00	32.603
Asian	3	11.00	63.00	33.33	26.764
Black or African American	3	3.00	86.00	33.33	45.785
Hispanic or Latino/a	3	13.00	72.00	33.33	33.501
Other race	3	19.00	59.00	33.33	22.278
White	3	8.00	48.00	33.33	22.030

Table (2): The descriptive measures of the sample opinions. These above data can be diagrammed as follows:

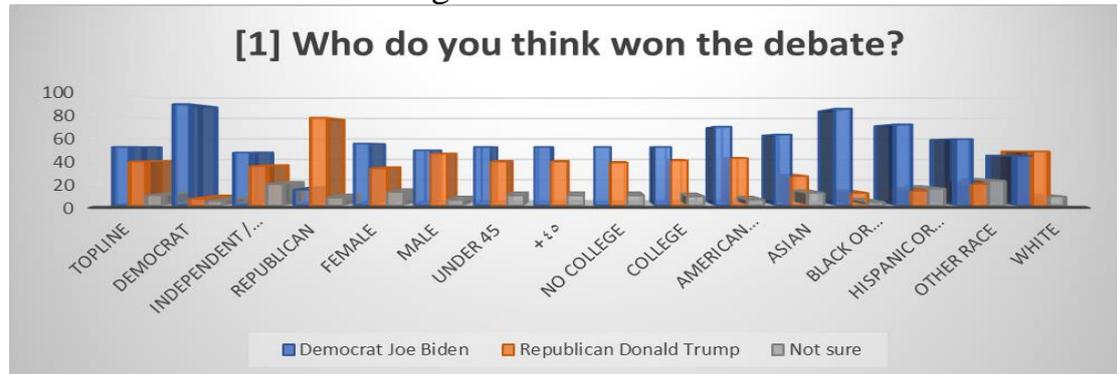


Figure (8): Survey of responses to the first presidential debate question “Who do you think won the debate?”

The second question, which reads: “Which candidate comes off as more Presidential to you during the debate?” The following table (3) demonstrates the responses, as follows:

Response	Topline	Democrats	Independent/Third Party	Republicans	Female	Male	Under 45	45+	No College	College	American Indian or Alaska native	Asian	Black or African American	Hispanic or Latino/a	Other Race	White
Democrats (Biden)	53	89	48	18	56	51	54	53	53	52	70	63	86	72	29	46
Republicans (Trump)	33	6	28	66	29	38	33	33	33	40	24	26	11	13	19	40
Not sure	13	5	24	16	15	11	13	13	13	8	5	11	3	15	22	14
Weighted N	1544	619	363	562	819	722	571	973	941	603	10	55	175	129	35	1140

Table (3): Responses to the second question “Which candidate comes off as more Presidential to you during the debate?”

The results of the second question can be figured out from the results of table (3) and table (4), particularly *Topline* of the poll sample. It shows that the " Democrat Joe Biden" obtained (53) of the sample votes, while the " Republican Donald Trump" obtained (33) of the sample votes, and finally there was a number (13), from the sample members who were not sure, with a mean vote (33.00) and a standard deviation (20.000). The following table (4) shows the descriptive measures of the sample opinions:

Descriptive Statistic Analysis					
	N	Minimum	Maximum	Mean	Std. Deviation
Topline	3	13.00	53.00	33.00	20.000
Democrat	3	5.00	89.00	33.33	48.211
Independent / Third Party	3	24.00	48.00	33.33	12.858
Republican	3	16.00	66.00	33.33	28.307
Female	3	15.00	56.00	33.33	20.840
Male	3	11.00	51.00	33.33	20.404
Under 45	3	13.00	54.00	33.33	20.502
45+	3	13.00	53.00	33.00	20.000
No College	3	13.00	53.00	33.00	20.000
College	3	13.00	53.00	33.00	20.000
American Indian or Alasks Native	3	13.00	63.00	33.33	26.274
Asian	3	18.00	63.00	33.33	25.696
Black or African American	3	9.00	81.00	33.33	41.283
Hispanic or Latino/a	3	12.00	75.00	33.33	36.087
Other race	3	14.00	52.00	33.33	19.008
White	3	14.00	46.00	33.33	17.009

Table (4) shows the descriptive measures of sample opinions..

The following figure shows the previous results:

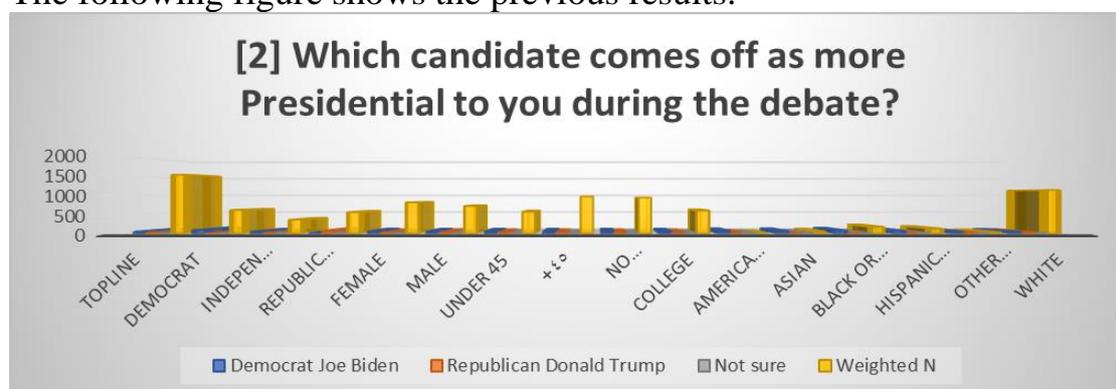


Figure (9): Survey of responses to the second presidential debate question “Which candidate comes off as more Presidential to you during the debate?”

9. Conclusion

This study proposed a prosodic representation for the 2020 American presidential debates. It characterized some rules which map them into prosodic features. These prosodic features, through forty-five utterances, illustrated three components. Firstly, prosodic feature of STRESS is employed to change word meaning or to focus attention on particular words or the ideas associated. Secondly, tonal features enable the candidates to give shape to their utterances. Thirdly, intonation gives utterances a further paralinguistic meaning that is independent of the meanings of the words individually. These features have a dexterous communication with the addressees and allow the addressees to get an in-depth understanding of the reason why the presidential candidates are keen on controlling over these features.

Both candidates exploit these prosodic features to convey the emotional states, such as anger, happiness, sarcasm, disgust, and sadness, because these features determine the meaning of what is uttered, either neutral, imperative or question. Moreover, they provide information about the candidate's actual intention when speaking, as reflected by their intonation. In each of their utterances, the candidates employ tonic stress in order to make their message obvious to their addressees. To present their new and given information, they employ the intonation feature, as well, i.e., the falling tone indicates new information, while rising or falling -rising indicates “shared or given” information. Both candidates use sonorous syllables ‘a deep or ringing sound’ to draw the attention, and to convey their intended meanings. Throughout the two debates, Biden employs specific words and expressions to emphasize certain views and policies different from that of Trump. Biden was keen on picking words and expressions out selectively to affect meaning than Trump. More specifically, Biden exploits these prosodic features to get the addressees to agree with and believe his views.

Importantly, prosodic features are conducted to examine how much the candidates’ intended emotional states and attitudes agreed with the addressees’ auditory impressions, using 36 speech samples uttered by the two presidential candidates. The analysis of the two candidates’ utterances shows that how Biden and Trump employ the emotions of anger, sadness, happiness and satire to influence their addressees. In turn, the addressees perceive these emotions as the presidential candidates intended to express and convey. The features of prosodic parameters, based on the speech analysis, are classified according to the function intended of the utterances, therefore these features are analyzed by Praat program.

In this study, the type and degree of each feature have been determined by the candidates themselves. In public communication, however, a candidate's emotional states inside his mind are not necessarily reflected in his utterances, nor they are exactly conveyed to the addressees as the candidate intended. The study traces how much the candidate's internal intention is correctly conveyed to the addressees and further, what type of expression the candidate can convey to the targeted addressees correctly. Consequently, Trump and Biden managed to convey various emotional states and attitudes through their prosodic features, which the targeted addressees recognized and reacted to. This recognition contributed to identifying the intended meanings of their utterances consistently, leading to choosing Biden as the president, through the polls conducted to survey the addressees' responses during and after the two debates. It is evident that Biden instrumented these prosodic features appropriately to the addressees. As America confronts a fateful choice, the addressees appeal to the ethics that originally made America live in dignity and be the first country around the world.

Notes:

A list of phonemic symbols used in the transcription of English forms adapted from <https://www.phonemicchart.com/>

	Single Vowels				Diphthongs			
Phonemic Symbols	ɪ	i	ʊ	u	eɪ	ɔɪ	aɪ	
Sound	i	ee	oo	oo	ai	oi	i	
Phonemic Symbols	ɛ	ɜ	ə	ɔ	eə	ɪə	ʊə	
Sound	e	er	er	oo	air	ere	ou	
Phonemic Symbols	æ	ʌ	ɒ	ɑ	oʊ	aʊ	-	
Sound	a	u	o	a	ow	ou	-	
Unvoiced Consonants								
Phonemic Symbols	p	f	θ	t	s	ʃ	tʃ	k
Sound	p	f	th	t	s	sh	ch	c
Voiced Consonants								
Phonemic Symbols	b	v	ð	d	z	ʒ	dʒ	g
Sound	b	v	th	d	z	s	j	g
Phonemic Symbols	m	n	ŋ	h	w	l	r	j
Sound	m	n	ing	h	w	l	r	y

-The icons below the sound figures (2-7) can be run by pressing CTRL + clicking right with the mouse

<https://www.rev.com/blog/transcripts/donald-trump-joe-biden-final-presidential-debate-transcript-2020>

<https://www.usatoday.com/story/news/politics/elections/2020/09/30/presidential-debate-read-full-transcript-first-debate/3587462001/>

¹[http://en.wikipedia.org/wiki/Prosody_\(linguistics\)](http://en.wikipedia.org/wiki/Prosody_(linguistics)).

²<http://cdn.cnn.com/cnn/2020/images/10/23/october.22.debate.reaction.poll.pdf>

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