



A Comparative Analysis of British, American, and Australian English Accents Using Praat Software

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ABSTRACT

This study investigates the acoustic differences among British, American, and Australian English accents using Praat software. A descriptive quantitative method was employed, and the data were obtained from a publicly available online source providing spoken English samples of the three accents. Two English sentences were selected and analyzed to measure acoustic features, including duration, fundamental frequency, and intensity. The analysis was conducted by segmenting each sentence in Praat and recording the acoustic measurements. The results show that British English consistently has a longer duration and higher average intensity compared to American and Australian English, indicating clearer and more emphasized speech production. In contrast, Australian English exhibits the highest average fundamental frequency across all analyzed sentences, reflecting a higher pitch level. American English demonstrates moderate values in duration, frequency, and intensity. These findings confirm that British, American, and Australian English accents display distinct acoustic characteristics even when producing the same sentences, highlighting the usefulness of acoustic analysis in identifying accent differences

Keyword: English accents, Acoustic Analysis, Praat, Pronunciation



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1. Introduction

English plays a significant role as a global language and functions as a primary medium of international communication. Crystal (2003) states that English has achieved global status due to its widespread use across countries as a first, second, and foreign language. Currently, English is the official language in more than 50 countries and is spoken by hundreds of millions of native speakers worldwide, in addition to a much larger population of second-language users. This global spread makes proficiency in English—particularly spoken English—an essential skill.

One of the most important aspects of spoken English is pronunciation. Pronunciation determines how speech sounds are produced and perceived and directly affects intelligibility. According to Cook (1996, as cited in Gilakjani, 2016), pronunciation refers to the production of sounds that make meaning in a language. Similarly, Hornby (2008) defines pronunciation as the way a word or a language is spoken. Poor pronunciation can lead to misunderstanding even when grammatical structures and vocabulary are correct (Celce-Murcia, Brinton, & Goodwin, 2010). Therefore, mastering pronunciation is crucial for effective oral communication.

Pronunciation learning involves repeated exposure, practice, and correction. Gilakjani (2016) explains that learners often face difficulties in pronunciation due to the influence of their first language, which affects

sound production, stress patterns, and intonation. As learners acquire correct pronunciation, they form new speech habits and gradually overcome fossilized errors. Native speakers, on the other hand, generally demonstrate more natural pronunciation because they acquire the language in authentic communicative environments. However, native speakers do not share a single uniform pronunciation; instead, they speak with distinct accents depending on geographical and sociolinguistic factors.

Among the most widely recognized native English accents are British, American, and Australian English. Trudgill (2000) argues that these accents represent different standard varieties of English with unique phonetic and phonological characteristics. British English, particularly Received Pronunciation (RP), is often associated with non-rhoticity and vowel length distinctions (Roach, 2009). American English is typically rhotic and exhibits differences in vowel quality and stress patterns (Ladefoged & Johnson, 2011). Australian English, while historically derived from British English, has developed its own distinctive vowel system and intonation patterns (Cox, 2012). These accent differences influence how sounds, words, and sentences are produced.

Previous studies on English accents have largely focused on phonological descriptions rather than instrumental acoustic measurements. Roach (2009) provides a detailed phonological account of British English pronunciation, while Ladefoged and Johnson (2011) examine the phonetic characteristics of American English. Cox (2012) discusses the phonological development of Australian English vowels. Although these studies offer valuable theoretical insights, they often rely on auditory analysis and do not systematically quantify acoustic parameters such as duration, frequency, and intensity.

In recent years, acoustic phonetic analysis has gained prominence due to the availability of speech analysis software. One widely used tool is Praat, a free computer program developed by Boersma and Weenink (2023) for phonetic analysis. Praat allows researchers to analyze speech signals by measuring acoustic features such as fundamental frequency (F0), intensity, and duration. Several studies have demonstrated the effectiveness of Praat in pronunciation and phonetic research. For instance, Yusuf and Pillai (2013) used Praat to analyze vowel duration differences, while Narhan, Sholihatun, and Syarfina (2024) employed Praat to measure frequency, intensity, and duration in speech analysis. These studies confirm that Praat provides reliable and objective data for acoustic comparison.

Despite the growing use of Praat in phonetic research, there is a noticeable research gap in studies that comparatively analyze British, American, and Australian English accents within a single acoustic framework. Most existing research focuses on one accent at a time or compares only two varieties. Furthermore, limited attention has been given to analyzing complete spoken sentences using multiple acoustic parameters simultaneously. This gap restricts a comprehensive understanding of how these major English accents differ acoustically in real speech production.

Therefore, this study aims to conduct a comparative analysis of British, American, and Australian English accents using Praat software. The purpose of this research is to measure and compare duration, frequency, and intensity of selected English sentences spoken by speakers of the three accents. By applying instrumental acoustic analysis, this study seeks to provide objective evidence of pronunciation differences among these accents.

This research lies in its systematic comparison of three major native English accents using multiple acoustic parameters within the same analytical framework. Unlike previous studies that rely primarily on descriptive or auditory analysis, this study integrates quantitative acoustic data to reveal measurable accent differences. The findings are expected to contribute to phonetic research and offer practical implications for pronunciation teaching, accent awareness, and English language learning.

2. Method

This study employed a descriptive quantitative method with an acoustic phonetic approach to compare British, American, and Australian English accents. There are two speeches that taken as the data which is obtained from a publicly available online source, <https://preply.com/en/blog/different-english-accents/>, which provides spoken English examples representing the three accents. The selected speech samples consisted of clearly articulated English sentences with minimal background noise, ensuring that each accent could be identified and analyzed consistently.

The speech recordings were converted into WAV format and analyzed using Praat software (Boersma & Weenink, 2023). The acoustic features measured in this study included duration, fundamental frequency, and intensity of each sentence. The analysis was conducted by segmenting each sentence in Praat and recording the acoustic measurements. The results were then compared descriptively to identify similarities and differences in pronunciation across British, American, and Australian English accents.

3. Results and Discussion

In this research, there are three sentences that are going to be analysed by using Praat. The sentences are “You better watch your step!”, “The kids love playing in the water.”, and “He had enormous charm and a great sense of humour.” These sentences are analyzed by using the Praat software. It is a free computer software package for speech analysis in phonetics. It was designed and continues to be developed, by Paul Boersma and David Weenink of the University of Amsterdam.

Results

a.) Sentence: “You better watch your step!”

Phonetic Transcription : /ju: 'bɛtə wɒtʃ jɔ: step/

Vowel	: 6 (u:, ε, ə, ɔ:, ε)
Consonant	: 9 (j, b, t, w, ʃ, ʃ, s, t, p)

1. British Accent

a. Duration

In the picture below, we can see that the total duration of the sentence is 1.392 seconds and it consists of five words.

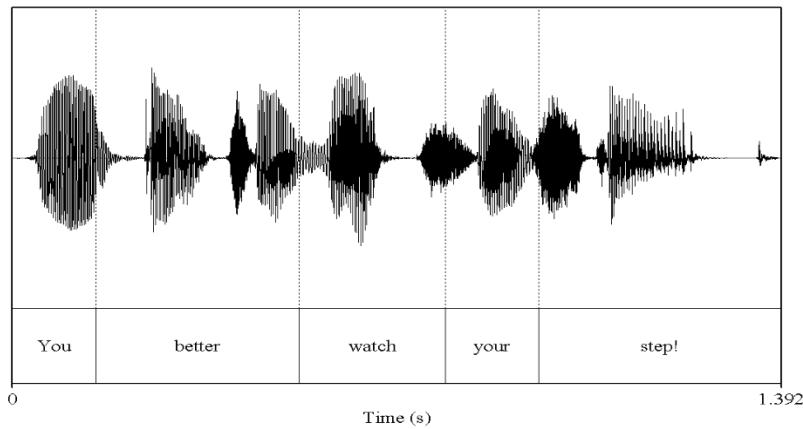


Figure 1. Duration of British Accent

The sentence above consists of five words, and each of these words has different duration. The sentence started with the word “You” which has a duration of 0.15 seconds. The second word “better” has a duration of 0.37 seconds. The third word is “watch” which is 0.26 seconds long. The fourth word is “your” which has a duration of 0.17 seconds. Lastly, the fifth word is “step!” which has a duration of 0.44 seconds

b. Frequency/Pitch

Table 1. British Accent Frequency

Frequency	Total	Word
Average frequency	242.26 Hz	-
Minimum frequency	75.28 Hz	Step
Maximum frequency	321.70 Hz	Better

Based on the analysis above, the researcher found the result of the frequency from the sentence. The average or mean frequency is 242.26 Hz, the minimum frequency is 75.28 Hz which is found in the word “step”, and the maximum frequency is 321.70 Hz which is found in the word “better”.

c. Intensity

Table 2. British Accent Intensity

Intensity	Total	Word
Average intensity	76.84 dB	-
Minimum intensity	31.22 dB	step
Maximum intensity	84.00 dB	You

Based on the analysis above, the researcher found the result of the intensity from the sentence. The average or mean intensity is 76.84 dB, the minimum intensity is 31.22 dB which is found in the word “step”, and the maximum intensity is 84.00 dB which is found in the word “You”.

2. American Accent

a. Duration

In the picture below, we can see that the total duration of the sentence is 1.301 seconds and it consists of five words.

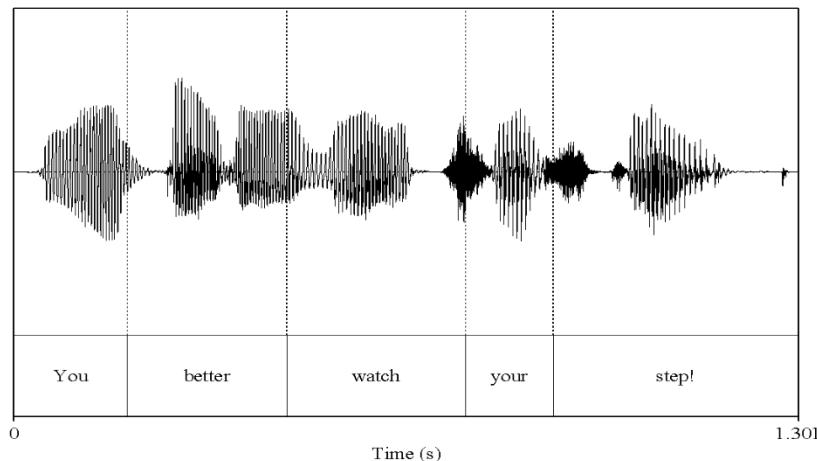


Figure 2. Duration of American Accent

The sentence above consists of five words, and each of these words has different duration. The sentence started with the word “You” which has a duration of 0.19 seconds. The second word “better” has a duration of 0.26 seconds. The third word is “watch” which is 0.30 seconds long. The fourth word is “your” which has a duration of 0.14 seconds. Lastly, the fifth word is “step!” which has a duration of 0.41 seconds.

b. Frequency/Pitch

Table 3. American Accent Frequency

Frequency	Total	Word
Average frequency	168.98 Hz	-
Minimum frequency	98.23 Hz	step
Maximum frequency	246.77 Hz	better

Based on the analysis above, the researcher found the result of the frequency from the sentence. The average or mean frequency is 168.98 Hz, the minimum frequency is 98.23 Hz which is found in the word “step”, and the maximum frequency is 246.77 Hz which is found in the word “better”.

c. Intensity

Table 4. American Accent Intensity

Intensity	Total	Word
Average intensity	75.63 dB	-
Minimum intensity	37.79 dB	step
Maximum intensity	81.87 dB	You

Based on the analysis above, the researcher found the result of the intensity from the sentence. The average or mean intensity is 75.63 dB, the minimum intensity is 37.79 dB which is found in the word “step”, and the maximum intensity is 81.87 dB which is found in the word “You”.

3. Australian Accent

a. Duration

In the picture below, we can see that the total duration of the sentence is 1.301 seconds and it consists of five words.

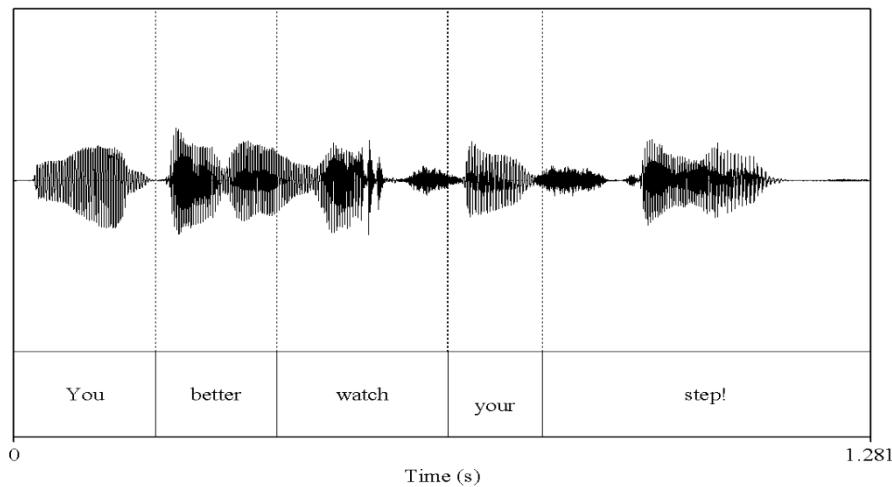


Figure 3. Duration of Australian Accent

The sentence above consists of five words, and each of these words has different duration. The sentence started with the word “You” which has a duration of 0.21 seconds. The second word “better” has a duration of 0.18 seconds. The third word is “watch” which is 0.26 seconds long. The fourth word is “your” which has a duration of 0.14 seconds. Lastly, the fifth word is “step!” which has a duration of 0.49 seconds.

b. Frequency/Pitch

Table 5. Australian Accent Frequency

Frequency	Total	Word
Average frequency	251.05 Hz	-
Minimum frequency	160.77 Hz	step
Maximum frequency	296.31 Hz	step

Based on the analysis above, the researcher found the result of the frequency from the sentence. The average or mean frequency is 251.05 Hz, the minimum frequency is 160.77 Hz which is found in the end of the word “step”, and the maximum frequency is 296.31 Hz which is found in the middle of the word “step”.

c. Intensity

Table 6. Australian Accent Intensity

Intensity	Total	Word
Average intensity	71.85 dB	-
Minimum intensity	30.42 dB	step
Maximum intensity	77.91 dB	You

Based on the analysis above, the researcher found the result of the intensity from the sentence. The average or mean intensity is 71.85 dB, the minimum intensity is 30.42 dB which is found in the word “step”, and the maximum intensity is 77.91 dB which is found in the word “You”.

b.) Sentence: “He had enormous charm and a great sense of humour.”

Phonetic Transcription	: / hi: hæd ɪ'no:məs ʃa:m ænd ə greit səns ɒv 'hju:mə./
Vowel	: 13 (i:, æ, ɪ, ɔ:, ə, a:, ɛ, eɪ, ε, ɒ, u:, ə)
Consonant	: 22 (h, b, d, n, m, s, ʃ, m, n, d, g, r, t, s, n, s, v, h, j, m)

1. British Accent

a. Duration

In the picture below, we can see that the total duration of the sentence is 2.929 seconds and it consists of ten words.

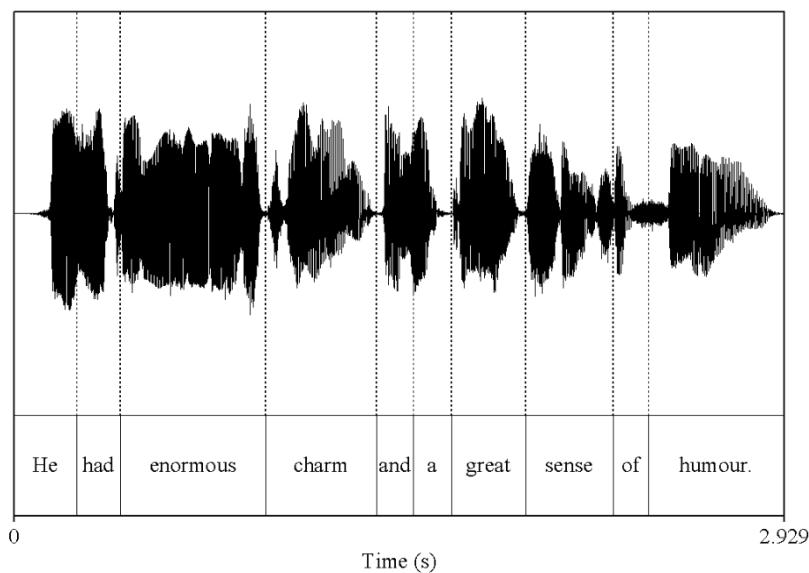


Figure 4. Duration of British Accent

The sentence above consists of ten words, and each of these words has different duration. The sentence started with the word “He” which has a duration of 0.24 seconds. The second word is “had” with a duration of 0.16 seconds. The third word is “enormous” with a duration of 0.55 seconds. The fourth word is “charm” with a duration of 0.42 seconds. The fifth word is “and” which has a duration of 0.14 seconds. Then the sixth word is “a” which has a duration of 0.14 seconds. The seventh word is “great” which has a duration of 0.28 seconds. The eighth word is “sense” which has a duration of 0.33 seconds. The ninth word is “of” which has a duration of 0.13 seconds. Then the last word is “humour” which has a duration of 0.51 seconds.

b. Frequency/Pitch

Table 7. British Accent Frequency

Frequency	Total	Word
Average frequency	235.16 Hz	-
Minimum frequency	133.14 Hz	humour
Maximum frequency	327.56 Hz	enormous

Based on the analysis above, the researcher found the result of the frequency from the sentence. The average or mean frequency is 235.16 Hz, the minimum frequency is 133.14 Hz which is found in the word “humour”, and the maximum frequency is 327.56 Hz which is found in the word “enormous”.

c. Intensity

Table 8. British Accent Intensity

Intensity	Total	Word
Average intensity	77.77 dB	-
Minimum intensity	18.24 dB	He
Maximum intensity	83.37 dB	He

Based on the analysis above, the researcher found the result of the intensity from the sentence. The average or mean intensity is 77.77 dB, the minimum intensity is 18.24 dB which is found in the word “He”, and the maximum intensity is 83.37 dB which is also found in the word “He”.

2. American Accent

a. Duration

In the picture below, we can see that the total duration of the sentence is 2.556 seconds and it consists of ten words.

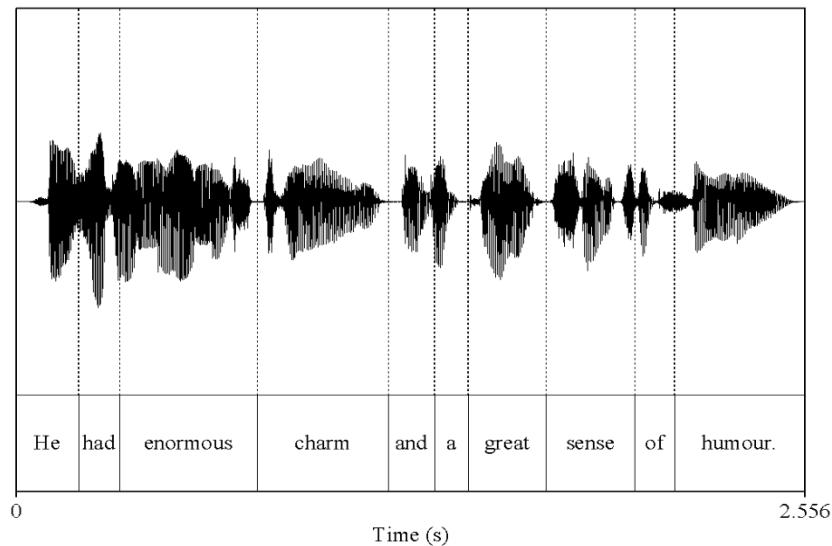


Figure 5. Duration of American Accent

The sentence above consists of ten words, and each of these words has different duration. The sentence started with the word “He” which has a duration of 0.20 seconds. The second word is “had” with a duration of 0.13 seconds. The third word is “enormous” with a duration of 0.44 seconds. The fourth word is “charm” with a duration of 0.42 seconds. The fifth word is “and” which has a duration of 0.15 seconds. Then the sixth word is “a” which has a duration of 0.10 seconds. The seventh word is “great” which has a duration of 0.25 seconds. The eighth word is “sense” which has a duration of 0.29 seconds. The ninth word is “of” which has a duration of 0.13 seconds. Then the last word is “humour” which has a duration of 0.42 seconds.

b. Frequency/Pitch

Table 9. American Accent Frequency

Frequency	Total	Word
Average frequency	191.86 Hz	-
Minimum frequency	106.04 Hz	charm
Maximum frequency	284.28 Hz	He

Based on the analysis above, the researcher found the result of the frequency from the sentence. The average or mean frequency is 191.86 Hz, the minimum frequency is 106.04 Hz which is found in the word “charm”, and the maximum frequency is 284.28 Hz which is found in the word “He”.

c. Intensity

Table 10. American Accent Intensity

Intensity	Total	Word
Average intensity	72.85 dB	-
Minimum intensity	29.80 dB	and
Maximum intensity	79.85 dB	Had

Based on the analysis above, the researcher found the result of the intensity from the sentence. The average or mean intensity is 72.85 dB, the minimum intensity is 29.80 dB which is found in the word “and”, and the maximum intensity is 79.85 dB which is found in the word “had”.

3. Australian Accent

a. Duration

In the picture below, we can see that the total duration of the sentence is 2.539 seconds and it consists of ten words.

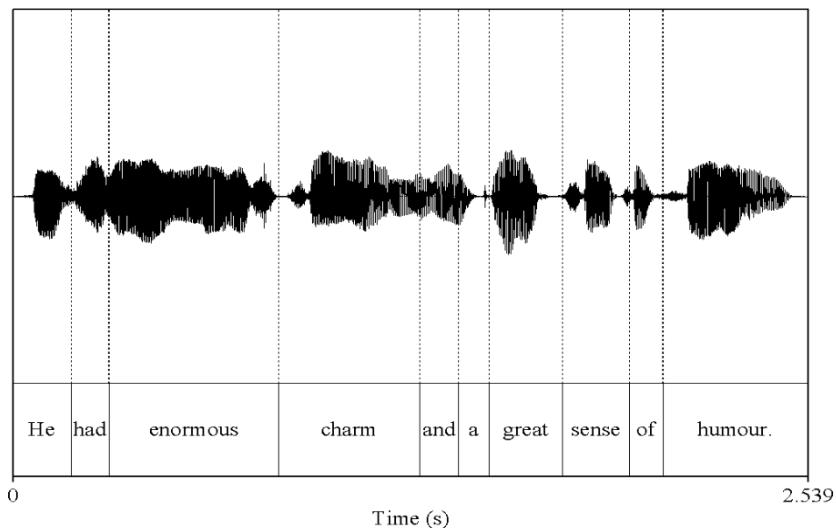


Figure 6. Duration of Australian Accent

The sentence above consists of ten words, and each of these words has different duration. The sentence started with the word “He” which has a duration of 0.18 seconds. The second word is “had” with a duration of 0.12 seconds. The third word is “enormous” with a duration of 0.54 seconds. The fourth word is “charm” with a duration of 0.45 seconds. The fifth word is “and” which has a duration of 0.12 seconds. Then the sixth word is “a” which has a duration of 0.097 seconds. The seventh word is “great” which has a duration of 0.23 seconds. The eighth word is “sense” which has a duration of 0.21 seconds. The ninth word is “of” which has a duration of 0.10 seconds. Then the last word is “humour” which has a duration of 0.46 seconds.

b. Frequency/Pitch

Table 11. Australian Accent Frequency

Frequency	Total	Word
Average frequency	235.36 Hz	-
Minimum frequency	167.96 Hz	Humour
Maximum frequency	295.12 Hz	had

Based on the analysis above, the researcher found the result of the frequency from the sentence. The average or mean frequency is 235.36 Hz, the minimum frequency is 167.96 Hz which is found in the word “humour”, and the maximum frequency is 295.12 Hz which is found in the word “had”.

c. Intensity

Table 12. Australian Accent Intensity

Intensity	Total	Word
Average intensity	71.73 dB	-
Minimum intensity	34.97 dB	great
Maximum intensity	77.77 dB	enormous

Based on the analysis above, the researcher found the result of the intensity from the sentence. The average or mean intensity is 71.73 dB, the minimum intensity is 34.97 dB which is found in the word “great”, and the maximum intensity is 77.77 dB which is found in the word “enormous”.

Discussion

In the first sentence, it is found that the British accent (1.392 s) has longer duration compared to the American accent (1.301 s) and Australian accent (1.281 s). For the frequency or pitch, it is found that the Australian accent (251.05 Hz) has the highest frequency average compared to the British (242.26 Hz) and American accent (168.98 Hz). This result shows that the Australian sample has a higher voice compared to the other. For the intensity, it is found that the British accent sample (76.84 dB) has the highest average intensity. This result shows how British accents can be heard clearly and better compared to the American and Australian accents.

In the second sentence, it is found that the British accent (2.929 s) has longer duration compared to the American (2.556 s) and Australian accent (2.539 s). For the frequency or pitch, it is also found that the Australian accent (235.36 Hz) has the highest frequency average compared to the British (235.16 Hz) and American accent (191.86 Hz) just like in the first and second sentence. It shows that the Australian sample has a higher voice compared to the other sample. For the intensity, it is found that the British accent sample (77.77 dB) has the highest average intensity among the three accent which is also the same in the first and second sentence. This result shows how British accents can be heard clearly and better compared to the American and Australian accents.

4. Conclusion

English language is so important to be understand. It is used 53 countries and many people use English language as their first language. The language also used as a second language almost everywhere around the world. In speaking English, one of the most important aspects is pronunciation. It is the way in which a word or a language is spoken. People considered a person is a good English speaker if they have good pronunciation.

Based on the analysis that has been done, the author found that there are a few difference between British, American, and Australian English speaker. From the overall result of the three sentences with three different accents, it is found that the British accent tends to have longer duration compared to the American and Australian accent. In contrast, the Australian accent always have shorter duration in each sentence being analysed. It shows how the Australian speaker is talking faster than the other two. In frequency or pitch level, the Australian always has the highest pitch between the three speakers. It shows that the Australian speaker has a higher voice compared to the British and American sample. In intensity, the British speaker always have the highest average intensity. This shows that the British speaker pronunciation can be heard more clearly. To sum up, the differences between these three accents in the acoustic phonetic shows that each accent has their own characteristic in speaking the same language, and the English language learner can choose which accent are they going to learn based on their need in speaking English.

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