World Englishes and Prosody: Evidence from the Successful Public Speakers

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Abstract— As English has become the most common vehicle in global communication, disentangling intelligibility becomes an urgent issue in English pronunciation teaching and learning. Previous studies put more emphasis on segmentals and suggest some core features for maintaining intelligibility, but there is little concern on prosody. Based on the Intonation Theory proposed by Halliday, the present study examined the shared prosodic features of 15 successful public speakers under the World Englishes paradigm. Results showed that appropriate pause position, pause duration, tone choices, tonicity and pre-tonic stress, speech rate and clear enunciation has worked together to contribute to the effective delivery of information. The findings not only provide a better understanding towards the role of prosodic features in intelligibility and effective communication, but also have pedagogical implications for English teaching and learning.

Key words— World Englishes, intelligibility, prosody, successful public speakers

I. INTRODUCTION

Nowadays, English has been used as a Lingua Franca (ELF) for those who do not share a first language in global communication [1]. It is said that non-native English speakers communicating in English has outnumbered native speakers [2]. Many English varieties have gained their legitimate position as means of communication [3] and fallen into World Englishes paradigm [4]. Traditionally, a native-like accent was prioritized as the ideal ultimate learning goal [5]. Yet, abundant studies have proved that second language (L2) learners could rarely obtain a nativelike speech pattern, even if they began their study at an early age [6]. And even more crucially, recent studies also convincingly have shown that accented speeches do not necessarily prelude communication breakdown [7], [8]. Therefore, under these circumstances, exploring what phonetic features are essential to maintain intelligibility in international communication becomes the primary goal (e.g., [9], [10], [11], [12]).

Normally, the definition of intelligibility is hard to pin down and even sometimes confounded with that of comprehensibility. Recent studies seemingly tend to claim the broader definition of comprehensibility actually is similar to intelligibility [13], and focus comprehensibility (e.g., [14], [15], [16]). However, these two constructs reflect different dimensions of the understanding process in nature [17]. Comprehensibility refers to the listeners' perceived degree of difficulty during understanding, while intelligibility emphasizes the actual understanding of utterances, more closely to the real-life context. Thus, the current study disentangles these two constructs and focus on intelligibility.

To date, several studies have examined what phonetic features would facilitate the intelligibility. However, there is far less agreement as to the contributions of segmentals and suprasegmentals on this issue. Many scholars of ELF claimed the importance of segmentals in enhancing intelligibility. Based on a three-year classroom observation, [3] proposed Lingua Franca Core (LFC) model, arguing most consonants, consonant clusters, vowel length and nuclear stress as the core features to maintain intelligibility. Subsequent studies have continued to examine more English varieties, such as southeast Asian English [9], [12], Hong Kong English [18], Japanese English [19], China English [10], Korean English [19], and Arabic English [20]. All these studies paid attention to wordlevel recognition and their findings more or less lent support to the [3]'s hypothesis, suggesting segmental features as the learning and teaching priority. In fact, segmental features indeed play an important role in word-recognition [21], but interlocutors have the perceptual adaptation ability to the deviated segmental features and they are able to figure out the word meaning with the help of contextual cues if those deviations are consistent [22]. More importantly, as [23] pointed out that "the understanding of every single word is less important than understanding an overall meaning or gist of the message," in terms of the utterance-level and even larger discourse-level meaning, regrettably, the contribution of segmentals is limited.

Compared with segmentals, prosody is more flexible and dynamic, changing with speakers' intention and emphasis [24]. For example, inappropriate use of falling tone as the boundary tone for "open the door, please" will convey an indifferent attitude, which might transform the intended meaning. However, this line of research has undervalued the role of prosody in facilitating intelligibility. Although there were previous studies reporting prosodic deviance related to intelligibility reduction, these studies focused on the overall impression of segmentals and prosody [25], which and how prosodic cues affected intelligibility still have remained unclear. The existing studies have examined the impact of one single prosodic feature on intelligibility at one time, such as primary stress [26], [27], lexical stress [28], [29], tone choices [30], pause duration [31], and speech rate [31], [33]. Nevertheless, not all the research starts from the ELF paradigm, still using native speakers' judgement as the benchmark instead. (e.g., [26], [27], [28], [30]). Whether the findings are applicable in non-native speakers calls for more evidence [33]. More importantly, it should be recognized that all these prosodic cues are not isolated but working together to achieve intelligible speeches. However, it has not received the due attention in this line of research yet.

Furthermore, in terms of assessing intelligibility, most studies, no matter investigating which phonetic features, focused on the breakdown which was defined as unintelligibility to conclude the key features affecting communicative success. But there are seldom investigations on successful speakers to find out their shared features. Because of the differences of English varieties and variability of interactional contexts, interlocutors must follow some basic constraints to guide their speeches to intelligibility. Those constraints may not be explicit, but quite unconscious for speakers to refer to. Thus, exploring the features shared by World Englishes successful speakers would also shed light on how people encode and decode information to ensure intelligibility.

Therefore, these unresolved problems provide the motive for the present exploratory study. The video clips of successful public speakers (henceforth SPS) from all the three circles were analyzed, aiming to answer the following questions: What are the shared prosodic features of successful World Englishes public speakers? And how are they combined to contribute to the effective communication?

II. METHODOLOGY

A. Participants

a. Identification of Successful Public Speakers

Two aspects were taken into consideration when choosing SPS. The first factor is that all the analyzed speeches had been prepared, rehearsed and delivered to the public in a formal context so that speakers must have made efforts to make their speeches intelligible. The second factor is the overall communicative effect of the speeches. For a successful communication, there would be explicit signs as positive responses, like laughter or applaud from the audience, and implicit signs, like being adopted and shown in the media or in other ways of publicity. The adopted speeches in the present study have gained their widespread popularity which is suggested by their total viewing times on the Internet.

b. Analyzed Data

Based on the criteria of identifying SPS, 15 video clips were collected, including TED talks and national leader's speeches. These speakers come from 14 countries, covering all the three circles [4]. The following Table 1 demonstrates the detailed information.

B. Analytical Framework and Instrument

Halliday [34]'s Intonation Theory was taken as a principal analytical framework in the present study, i.e. Tonality (phrasing marked by pauses), Tonicity (prominence representing information focus), and Tone (pitch status at the boundary of intonation unit). Pike's [35] and Wells' [36] rules of relationship between sentence stress and word class and information status were also used to analyze the data. In addition, Praat was employed to illustrate the acoustic parameters including pause position, pause duration, sentence stresses, nuclear and boundary tones.

Speakers	Identity	Category
British	The Queen's New Year's Message	Inner Circle
American	Presidential speech	
Indian	TED talk	
Nigerian	Social media talk	Outer Circle
Singaporean	Social media talk	
French ^a	Presidential speech	Expanding Circle
Italian	Presidential speech	
Russian	Presidential speech	
Japanese	TV program	
Chinese	Academic talk	
German	Social media talk	
French ^b	TED talk	
North Korean	TED talk	
Arabic	TED talk	
Brazilian	TED talk	

C. Procedures

All of the video-taped speeches were collected and segmented according to categories of prosodic features. For <u>Tonality</u>, co-occurrence of intonation unit and syntactic structure, and emphatic function of pauses were examined. For <u>Tonicity</u> and pre-tonic stresses, the marked and unmarked nuclear, emphatic stress, new information and prominence, numerals and prominence, and negation and prominence were analyzed. For <u>Tone</u>, primary tones and sentence types, secondary tones and speakers' attitudes, discoursal function of tones, and listing were investigated. Besides, <u>Clarity</u> and <u>Speech Rate</u> were also discussed.

III. RESULTS

A. Tonality

Tonality refers to the placement of tone group boundary in a text [34], which matches how speakers perceive and organize information chunks.

In the present study, no matter native or non-native SPS, they all followed the constraint that pause position was largely cooccurred with syntactic structures. This was consistent with former studies (e.g., [2], [37]).

As Table 2 displays, cases 1-4 present that SPS paused between subordinate and main clauses. The bold words were all the connectives, suggesting the syntactic structures of these sentences. These correct pause positions provided the clear information chunks in an organized way, which could avoid ambiguity and thus it enabled listeners to process information and catch the point effectively [21]. Also, case 5 was the same sentence as case 2, signifying a different function of pause position. Normally, *"the nations"* could not be used as an independent tonality, however, here president intended to stress the exact purpose soldiers *"fought for"*. This emphatic function of pause could draw listeners' attention and help them to comprehend the communicative purpose successfully.

In addition, pause duration has also been shown in bracket, suggesting that the optimal time length protected the complete tone groups. Also, one-way ANOVA was conducted to examine whether there existed differences among these three groups (Three circles). Results yielded no significant difference between groups [F(2, 14) = 4.204, p = .041]. Based on the evidence shown on pause positions and duration, therefore, it could be seen that these devices ensure these speeches to be fluent and comprehensible.

	Speakers	Example	Structure
1	British	be it through the Commonwealth Games /{518 ms}/ which begin in a few months' time on Australia's Gold Coast	main clause // attributive clause
2	American	we must never forget /{501ms}/ that those heroes /{314 ms}/ who fought against evil /{568 ms}/ also fought for /{450 ms}/ the nations /{433 ms}/ that they loved	main clause // object clause // attributive clause // attributive clause
3	Nigerian	when you are speaking /{202 ms}/ I put my ear down to understand what you say	adverbial clause // main clause
4	Japanese	If it is not available in your area /{398 ms}/ you can also use ham instead	conditional clause // main clause
5	American	we must never forget // that those heroes // who fought against evil // also fought for // the nations // that they loved	independent tone group indicting emphatic function

B. Tonicity

Tonicity refers to the placement of accents within a tone group [34].

As shown in the following Table 3, five different patterns of tonicity and pre-tonic stress were analyzed. Among the category of <u>Unmarked Stress</u>, the last content word worked as the most prominent syllable in an intonation unit (nuclear). Noticeably, transferred by L1, the German speaker conflated this notoriously famous consonant contrast $/w/\rightarrow/v/$ in "water" (case 2). While this consonant contrast was considered as the potential phonetic features obstructing intelligibility in LFC model [3], it still did not hamper the successful delivery with the help of contextual information. This may be also associated with functional load that relatively lower functional load have fewer chance to lead to the communication breakdown [38].

In addition, interlocutors would accentuate certain words according to their communicative purposes. <u>Emphatic Stress</u>, in case 3 and 4, reflected such pattern. The American President stressed the proposition "*for*", to catch the audience's attention. Such prosodic resource was also interrelated with aforementioned tonality pattern (Table 2, case 5), highlighting soldiers' bravery and dedication to their beloved country.

Moreover, another shared prosodic feature was the appropriate prominence to indicate the information status when making a comparison. In case 6, two words "*save*" and "*change*"

were with <u>Contrastive Features</u>, and hence, they were assigned the prominence in both tone groups. Also, case 7 displayed how the Japanese speaker dealt with the new and given information when introducing the ingredients. When "*pork*" was mentioned for the first time (<u>New Information</u>), it was the most stressed. Then the pronoun "*it*" replaced "*pork*" when it occurred for the second time (<u>Given information</u>) and "*ham*" became the information focus instead. In this case, although the strong accent and the vastly explored segmental deviation of /r/-/l/ by Japanese speakers were detected, such appropriate and clear employment of prosodic prominence still assisted the audience to grasp the core information in the fast speech stream effectively, which in accordance with the proved importance in previous studies (e.g., [26], [27]).

Furthermore, almost all of the numbers (Numerals) were assigned prominence in these speeches. The precise number in cases 8-10 could highlight the efforts made by governments. <u>Negation</u> as prominence also passed on the exact information as shown in cases 11 and 12. On the contrary, not stressing the negation might possibly fail to catch listeners' attention, which threatened the perceived semantic meaning and effective communication.

Table 3: The tonicity pattern of	SPS.
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	Speakers	Example	Structure	
1	British	sixty years ago TODAY // a young woman spoke about about the speed of technological CHANGE // as she presented the first television broadcast of its KIND	unmarked nucleus	
2	German there is WATER // and DUCKS			
3	American	we must never forget // that those heroes // who fought against evil // also fought FOR // the nations // that they loved	emphatic stress	
4	French	I DO know how your new president now has decided to jeopardize your budget // your initiatives // as he is extremely skeptical about climate change		
5	Singaporean	do you speak SINGAPOREAN // we speak ENGLISH	contrastive stress	
6	French	rench your wish is not to SAVE the world // but to CHANGE the world information		
7	Japanese	If <u>it (pork)</u> is not available in your area // you can also use HAM instead	information	
8	American	it has just been announced / that we will be spending almost \$ 700 BILLION		
9	Indian	Indian today we are in a country // which sells 8 MILLION mobile phones a month // of which 90 PERCENT of those mobile phones // are prepaid phones numbers		
10	Russian	70 PERCENT of participants // will housed within a FIVE -minute walking distance over the competition venues		
11	Italian	we are NOT a superpower in the military field		
12	Japanese	if it (pork) is NOT available in your area // you can also use ham instead	negation	

C. Tone

Tone refers to the direction of pitch movement [34]. It was found that SPS had a strong awareness to adjust their tone choices to the changes of sentence types, attitudes, and discourse structures.

From cases 1-3 in Table 4, it could be seen that Primary Tones were associated with sentence types. Specifically, Rising Tone was used in Yes/No questions, and Falling Tones were observed in WH-questions and declarative sentences. In addition, secondary tones, such as (High Fall, Low Fall, Rise-Fall; and High Rise, Low Rise, Fall-Rise) were reliable indicators of personal attitudes [24]. In case 5, Falling Tone could also indicate speaker's affirmatory attitude towards Italy's economic situation [39], matching his presidential identity. Moreover, regarding case 4, the speaker was introducing the situation when she was asked about the language landscape in Singapore, she stressed these contrastive words, "English" and "Singapore", and used High Fall as responses. This reflected that the speaker was unwilling to continue this topic and she was impatient for being asked the same questions so many times. If interlocutors do not have such repertoire of tone choices, they would fail to perceive emotional changes, which could possibly impede the intelligibility and harm the rapport-building relationship [24], [26].

Table 4: The primary and secondary tones of SPS.

	Speakers	Example	Structure
1	Singaporean	do you speak Singaporean ↑ we speak English ↓ we speak English in Singapore↓	Yes / No question↑ Declarative sentence ↓
2	French ^b	what about art? ↓ could art change the world? ↑	WH-question ↓ Yes / No question ↑
3	Italian	my personal position is that Italy's debt is too high, too much big \downarrow	Declarative sentence
4	Singaporean	do you speak Singaporean ↑ we speak English ↓ we speak English in Singapore↓	curiosity ↑ indifference ↓
5	Italian	my personal position is that Italy's debt is too high, too much big \downarrow	assertion↓

Further, tone choices also indicated the discourse relationship and information status as Table 5 shows. Like case 1, Rising Tone suggested the minor information, Falling Tone indicated the completion of major information, and <u>Falling Tone</u> signified the finality of the additional information.

Table 5: The discoursal functions of tones by SPS.

	Speakers	Example	Structure
1	British	Sixty years ago today $\uparrow //$ a young woman spoke about about the speed of technological change $\downarrow //$ as she presented the first television broadcast of its kind \downarrow	adverbial phrase ↑ // main clause↓ // adverbial clause↓
2	Nigerian	when you are speaking ↑ // I put my ear down to understand what you say ↓	adverbial clause↑ // main clause ↓

Besides, Listing was a typical example of discoursal function of tones. As Table 6 illustrates, Rising Tone was continuously used before the final listing item no matter in simple or complex listing patterns (like case 4). In these cases, despite the heavy accent and some obvious segmental deviations included in LFC model [3], like the substitution of $/d_3 / \rightarrow /z / in$ "job" and $/tr/ \rightarrow /ts/$ in "training" (case 3) and $/a/ \rightarrow /a/$ in "fat" (case 4), the appropriate tones still offered audience a positive suggestion of the discourse structure [30]. Therefore, in interactions, to avoid interrupting others or certain unnecessary silences, it is rather crucial for interlocutors to use this prosodic cue to signify turn-taking and discourse structure.

Table 6: The listing pattern of SPS.

	Speakers	Example	
1	British	he knew rejection $\uparrow //$ hardship $\uparrow //$ and persecution \downarrow	
2	Singaporean	we use English / in our everyday life in directions with our parents \uparrow // with our friends \uparrow // with our family \downarrow // you know, etc.	
3	North Korean	so we can benefit from the international community for education $\uparrow //$ English language training $\uparrow //$ job training $\uparrow //$ and more \downarrow	
4	French ^b	you have dictators $\uparrow //$ you know, ruling the world $\uparrow //$ population is growing by million $\uparrow //$ there's no more fish in the sea $\uparrow //$ the North Pole is melting $\uparrow //$ and as the last TED Prize winner said $\uparrow //$ we're all becoming fat \downarrow	
5	Arabic	so you go right ↑ // then straight ↑ // then go right again ↑ // then left ↑ // to reach all the way to the top ↓	

D. Other Features

There were also other shared prosodic features, which were not included in Halliday's Intonation Theory [34], facilitating the effective communication as well.

a. Clarity

It was found that the phenomenon of multiple stresses was quite common, especially among those whose speeches exhibited an apparent syllable-timed rhythm, like in the Chinese and Brazilian speaker's speech. Influenced by L1 transfer, they tended to enunciate every word equally-stressed without vowel reduction. This productive characteristic actually enhanced <u>Clarity</u> to some extent. Studies on ELF have suggested that syllable-timed has become the trend of the current English use in most varieties [3]. Also, previous investigations have argued that non-native interlocutors are more likely to rely on bottom-up strategy in language processing [3], [33], and speeches with every syllable articulated actually bring benefits for listeners to process the information [3], [18]. Therefore, prosodic features found in the present study lend support to previous findings.

E. Speech Rate

Speech Rate has always been regarded as a vital element of speech intelligibility [31], [32]. Results of one-way ANOVA reported no significant difference between these three groups considering the syllable rate [F(2,14) = 3.052, p = .085]. Further, the mean speech rate for all the speeches of SPS was 2.1 syllables/s, which was slower than 4.7 syllable/s reported by [31]. This difference may be because her study was based on native speakers' judgement. The slower speech rate in the present study might because SPS from all the three circles were aware of controlling and accommodating their speech rate when required to give a talk to the global audience [32]. In this way, it tempered listeners' listening effort by providing more enough processing time to comprehend speeches, and thus it fostered an effective communication.

IV. DISCUSSION AND CONCLUSION

The present study analyzed the prosodic features of SPS of World Englishes. Based on qualitative and quantitative analysis, it could be seen that no matter for native or non-native speakers, and no matter for which specific English variety they present, they have followed the basic prosodic constraints to make themselves understood by the audience. These features include appropriate pause position, pause duration, tone choices, tonicity and pre-tonic stress, speech rate and clear enunciation. Further, some examples have been used to demonstrate their contributions to communication success for more than once in different prosodic aspects. This actually suggests that these prosodic cues are not isolated but interrelated with other as a whole to generate an intelligible speech. The symbols used (// for tonality, bold part for tonicity, and arrows for tone) in every sub-section also reflected this important constraint, especially the case for tone choice in listing pattern. This interrelatedness has enhanced the intelligibility in communication. These findings are not only helpful to understand intelligibility better, but also have pedagogical implications for improving the efficiency in English teaching and learning rather than attending to every phonetic detail.

Confined by the sample size, more English varieties and more speakers of each English variety should be included for further analysis. Also, since this exploratory study mainly investigates the shared prosodic features by successful public speakers, some factors, like topics and genre, were not controlled. For the future direction, more variables should be manipulated to examine its specific effect on intelligibility to present a fuller picture.

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