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**Intelligibility of the English Spoken by Ibbi Yemenis to Indians: A phonetic study**Mohammed Ali Ali Al-Khulaidi mohamed.khulaidi336@gmail.com**Abstract:**

This article aims to investigate the intelligibility of the English spoken by Ibbi Yemenis to Indians. It provides an empirical account on the intelligibility of the English spoken by five Yemeni speakers from Ibb city, Yemen to ten Indian listeners both from south and north India. The study corpus consisted of 67 words read by the speakers and played back to the listeners. These words were recorded by an apple iPhone 5 voice memos recorder model A1428. Data analysis was both quantitative and qualitative. The study findings showed that the influence of Yemeni Arabic dialect impeded the correct pronunciation of specific English phonemes in the speaker's speech samples, thereby hindering the international intelligibility of their spoken English. The intelligibility of the five Yemeni speakers was below expectations, with only one speaker scoring 50% while the four others scored below this percentage. Other factors hindering the intelligibility of the English spoken by Ibbi Yemenis, included listener familiarity with English varieties and interlocutors. Grounded on the listeners' feedback, this study presents strategies to improve the intelligibility of spoken English among Yemeni learners originating from dialect-specific regions, thereby fostering the improvement of their communicative skills and enhancing their confidence when engaging with global audiences.

Keywords: Intelligibility, English spoken by Ibbi Yemenis, Phonetics, Indian speakers of English.

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مدى وضوح وفهم اللغة الإنجليزية التي يتحدثها اليمنيون من مدينة إب للهند: دراسة صوتية

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الملخص

هدف هذا البحث إلى التحقيق في مدى وضوح اللغة الإنجليزية اليمنية للهند. وهو يقدم وصفاً تجريبياً لمدى وضوح اللغة الإنجليزية التي يتحدث بها خمسة متحدثين يمنيين من مدينة إب، اليمن، لعشرة مستمعين هنود من جنوب وشمال الهند. تتكون بيانات الدراسة من 67 كلمة قرأتها المتحدثون وأعادوا تشغيلها للمستمعين. تم تسجيل هذه الكلمات بواسطة مسجل جوال iPhone 5 من طراز A1428 من شركة Apple. وتم تحليل البيانات كمياً ونوعياً. وأظهرت نتائج الدراسة أن تأثير اللهجة اليمنية العربية أعاد النطق الصحيح لبعض الأصوات الإنجليزية المحددة في عينات الكلام المتحدث، مما أعاد بالتالي وضوح اللغة الإنجليزية المنطقية دولياً. وكشفت الدراسة أن وضوح اللغة الإنجليزية المنطقية لدى المتحدثين الخمسة اليمنيين كان أقل من التوقعات، حيث حصل متحدث واحد فقط على 50٪ بينما حصل الأربعة الآخرون على أقل من هذه النسبة. ومن العوامل الأخرى التي أعادت وضوح اللغة الإنجليزية المنطقية إمام المستمع بأنواع اللهجات الإنجليزية والمحاورين. بناءً على ملاحظات المستمعين، تقدم هذه الدراسة استراتيجيات لتحسين وضوح اللغة الإنجليزية المنطقية بين المتعلمين اليمنيين المتحدثين من مناطق ولهجات محددة، ومن ثم تعزيز تحسين مهاراتهم التوافضية وتعزيز ثقهم عند التعامل مع المتحدثين في السياق الدولي.

الكلمات المفتاحية: الوضوح، اللغة الإنجليزية التي يتحدثها اليمنيون، الصوتيات، المتحدثون الهنود للغة الإنجليزية.

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© نُشر هذا البحث وفقاً لشروط الرخصة (CC BY 4.0 International Attribution 4.0 International)، التي تسمح بنسخ البحث وتوزيعه ونقله بأي شكل من الأشكال، كما تسمح بتكييف البحث أو تحويله أو الإضافة إليه لأي غرض كان، بما في ذلك الأغراض التجارية، شريطة نسبة العمل إلى صاحبه مع بيان أي تعديلات أُجريت عليه.



1. Introduction

Recently, there has been a growing spread of English globally for diverse political, economic and cultural reasons. In a globalized world witnessing an unprecedented development in all walks of life including business, travel and human mobility, there are more non-native English speakers than native English speakers, scoring the highest ever verbal exchanges across the globe (e.g. Crystal, 1997, 2003; Gnutzmann, 2000; Jarosz, 2019; Jenkins, 2015; Jenkins & Leung, 2014; Kachru, 1992; Liu & Fang, 2022; Wang & Yen, 2023; Widdowson, 1994). Even though native varieties of English like British Received Pronunciation and American English hold power and prestige in UK, USA, and many parts in the world, the global spread of regional varieties of English, featuring foreign accent, has been building momentum (Rose, 2020). Concerns have been voiced frequently that speakers of different varieties of English produce accented speech, hindering effective communication, perception and intelligibility (Chan, 2021; Smith & Nelson, 1985). On pedagogical grounds, this issue plays a vital significance among researchers working towards enhancing intelligibility for better current English Language Teaching and Teaching English to Speakers of Other Languages practices.

The paradigm of global English, triggered by all non-native English varieties, is an umbrella to describe the ideologies of English as a lingua franca ELF and World Englishes (WE) in diverse sociolinguistic contexts (Galloway, 2017). Intelligibility, viewed as word/utterance recognition (Smith, 1992), is one of the main areas of research in the field of WE. The debate on the emergence of non-native varieties of English seems to centre on this concept. Global English literature, according to Barrass et al. (2020), complicates intelligibility and comprehensibility since it tends to problematise "native norms" as the only benchmarks for successful lingua franca use. Several studies have considered native speakers to be the sole judges of non-native English speakers' intelligibility and comprehensibility. However, more and more researchers (e.g., Edwards et al., 2018; Nagle et al., 2019) have argued that native (L1) speakers are not always more intelligible than non-native speakers, and their speech needs to be intelligible and comprehensible only to those with whom we are most likely to communicate in English. Hence, international intelligibility and comprehensibility research has recently been concerned with the interaction between non-native speakers in L2-L2 English communication. Although the literature has begun to consider pairs of L2 interlocutors in non-native English speech communities, research remains limited.

Undoubtedly, the enormous spread of English all over the world and the important status English gained as a global language have paved the way for many countries to adapt their policies and reconsider the urgent need for English, and Yemen, of course, is one of them. Yemen has witnessed a colossal demand for English, especially in the last few decades. English is considered as a language of 'great respect in Yemen; especially as it is the language of the educated people' (Naif, 2003). The English spoken by Yemenis, an emerging variety whose intelligibility in



international context has not received due attention, and seems to be of a paramount research interest in the field of WE. According to the Kachruvian concept of circles, it can be said that Yemen belongs to the Expanding Circle. English is taught and used as a foreign language (Al-Wasy, 2002).

Yemeni English has started to come into some shape compared to RP in both segmental and suprasegmental aspects as demonstrated in empirical investigations carried out by some research scholars including Ali (2000) and Abdulkhalik (2018). Apart from such accounts, the intelligibility of the English spoken by Yemenis in international context has not received due attention, and seems to be of a paramount research interest in the field of WE. This study is situated within the broader context of global linguistics, where the intelligibility of L2 or EFL English speakers, particularly in multilingual settings, is gaining attention. It underscores the need for comprehensive studies on English intelligibility that reflect diverse linguistic and cultural backgrounds. In the past two decades, the number of Yemeni students going abroad in general and to India in particular has increased drastically and effective communication is hindered due to many factors while interacting in English with teachers, classmates and other people. This study aims to present an empirical inquiry on how intelligible the English spoken by Ibbi Yemenis is to Indian listeners and what factors are there behind inaccurate articulation and impeded intelligibility. It also seeks to identify some phonetic barriers encountered by L2 or EFL English speakers and to optimize English teaching models, thereby enhancing global communication and furthering international cooperation. Studying Yemeni English intelligibility is vital for facilitating cross-cultural communication and shaping global English education, providing insights into effective teaching methods and assessment standards that accommodate diverse student backgrounds. The study also contributes to understanding the diversity and complexity of global English, ultimately supporting the development of English as an international language.

With this in mind, the current study strives to answer the following questions:

- 1- To what extent is Yemeni English intelligible to Indian speakers of English?
- 2- What are some important factors hindering the intelligibility of the English spoken by Ibbi Yemenis in international contexts?

This article is structured as follows: first, I provide some theoretical foundations pertaining to intelligibility in the context of WE in terms of definition, role, factors, and related literature. Then, I describe the study procedures in terms of data, participants, recording and listening sessions, methods of analysis. Finally, I discuss the results and conclude with limitations and suggestions for further research.

2. Literature review

2.1. Pressing issues in World Englishes

As the concept of World Englishes started to gain currency, the landscape of English as a native-centered language has been radicalized into a more diverse language. In consequence, this shift of perspective created varying issues in terms of standardization, pedagogy, and others. Many sociolinguistic researchers embrace the notion that English, in this context, is not solely owned by native speakers. Kachru (1993) argues



that it is time to legitimize the variety of English that other countries have developed based on what is useful to them. Cystal (2003) further supports this when he emphasizes that English should not be regarded as a homogeneous language but rather a heterogeneous language with varying linguistic idiosyncrasies.

In contrast, Quirks (1990), a strong critic of World Englishes, holds that Standard English norms such as Received Pronunciation (RP) or General American (GA) should be used in non-native settings to gain international intelligibility. Quirk's concern regarding this concept was grounded on the idea that continuing to utilize a non-native variety of English in teaching non-native speakers has instrumental impacts on the intelligibility of the English user. Prator (1968) provides a foundation for the concern of Quirks (1990), stating that he does not see how a local model or variety of English can serve as a model for English language learners.

But the concern of Quirks (1990) was answered by Jenkins (2000) when she argued that NN teachers have the upper hand in teaching the language to NN learners because they have the personal knowledge of the "route" that the learners are taking in terms of learning the language. This is particularly relevant, especially if the NN teacher and NN learners have the same L1. In fact, multiple studies (e.g., Smith & Rafiqzad, 1979; Matsuura, 2007; and Orikasa, 2016) have proved that NNSs can be more intelligible than NSs.

2.2. Intelligibility concept in context of World Englishes

Intelligibility, defined as the listener's ability to recognize particular phrases or utterances (Hodgetts, 2020), also referred to as learners' "producing speech that can be understood by a range of different listeners" (Liu et al., 2022, p 3), is one of the main areas of research in the field of World Englishes. The debate on the emergence of non-native varieties of English seems to center on this concept. Catford (1950, p 7-8, Al-Otaibi, 2021) is of the view that intelligibility could be detected by the effectiveness of communication in an exchange defined in terms of "appropriate response to purpose in speaking". Smith (1992) thinks that in order to make sense of the term "intelligibility" one needs to draw a clear-cut distinction between intelligibility, comprehensibility and interpretability: Intelligibility refers to the word/ utterance recognition. Comprehensibility refers to the word/ utterance meaning and interpretability refers to the meaning behind the word/ utterance. He argues that the three categories, intelligibility, comprehensibility and interpretability, constitute three degrees of understanding in a continuum: from intelligibility to interpretability in order of importance. Intelligibility as Bryan Jenner (1989) defines is 'what all native speakers of all varieties have in common which enables them to communicate effectively with native speakers of varieties other than their own'. Bansal (1969, p:15) defines intelligibility on phonetic and pronunciation grounds: "to be intelligible, the speaker must articulate his sounds and words clearly, so that the hearer does not have to stop to think what the word was meant".

The emphasis on intelligibility in the international context to promote cross-cultural dialogue, reinforced by the increasing demand for English as a lingua franca and tailored in language instruction to address non-native speakers' phonetic hurdles - have aroused intense scholarly curiosity and deep interest for

exploring the role of intelligible effective communication in any international setting. With English evolving beyond its traditional native-speaker domain to become a global lingua franca, there has been a paradigm shift in linguistic research toward contemporary research that challenges the notion that speakers who speak English as the first language (L1) are the only evaluators of intelligibility, acknowledging the growing prevalence of English as a second (ESL) or foreign language (EFL) (Zeng, 2024, Alsubhi, 2024).

2.3. Factors influencing intelligibility

Previous research has established that intelligibility and comprehensibility are shaped by a wide array of factors. Both native speaker (NS) and non-native speaker (NNS) listeners evaluate these constructs by considering not only pronunciation and fluency, which influence perceptions of second language (L2) accents, but also grammatical, lexical, and discourse-related elements, as well as contextual and situational variables. However, much of the research on intelligibility and comprehensibility within the framework of World Englishes has predominantly focused on Kachru's (1985) Inner Circle, where native speakers are often positioned as the primary evaluators of these constructs (Jenkins, 2003). A significant portion of the literature has examined how native speakers assess non-native speakers from the Outer and Expanding Circles. Pickering (2006) argues that this practice reflects and perpetuates existing inequalities within the global use of English. This monolingual bias has been critiqued, as studies have shown that intelligibility between native speakers is not inherently superior to that observed in English as a Lingua Franca (ELF) contexts (Deterding, 2012). Furthermore, Barrass et al. (2020) highlight that many studies assume native speakers as the default interlocutors, despite evidence suggesting that interactions between non-native speakers may be more prevalent in real-world communication.

While a significant body of research has traditionally relied on the judgments of native (L1) listeners, a paradigm shift has emerged in response to the growing prominence of English as a Lingua Franca (ELF) and the recognition that the majority of English users are non-native (L2) speakers (Pennycook, 2017). Smith and Nelson (1985) conducted a comprehensive review of 163 studies on intelligibility and comprehensibility published between 1950 and 1985, concluding that "native speakers are no longer the sole judges... [and] are not always more intelligible than non-native speakers" (p. 333). Their work emphasized the critical role of interaction and identified several key factors influencing intelligibility, such as familiarity with English varieties and topics, language proficiency, speech rate, and listeners' engagement and expectations. However, while Smith and Nelson's review highlighted important gaps in the literature, it cannot be considered a systematic review, as the methods for qualitatively or quantitatively analyzing the included studies were not clearly outlined.

Pickering (2006) further examined studies on intelligibility and argued that intelligibility in ELF interactions differs qualitatively from that in native speaker-based contexts. This distinction arises from the



dynamic interplay of contextual factors, including speaker, listener, and environmental variables, which vary across diverse communicative settings (Deterding & Kirkpatrick, 2006; Meierkord, 2004). This perspective underscores the need to move beyond native speaker-centric frameworks and consider the complexities of ELF communication.

2.4. Testing intelligibility

The assessment of intelligibility is typically conducted through the transcription of speech (e.g., Sheppard et al., 2017), while comprehensibility is often measured using Likert scales (e.g., Isaacs & Thomson, 2013). Although Derwing et al. (1998) have asserted that these measurement methods are generally reliable, the considerable variability in the length of rating scales may impact the consistency of research findings (DeVelle, 2008). Additionally, it is important to acknowledge that experimental conditions often fail to accurately replicate the dynamics of natural discourse. A notable limitation in many studies is the reliance on pre-recorded speech samples for participant evaluation (e.g., Zhang, 2015), rather than analyzing spontaneous speech produced in interactive and communicative contexts. The controlled environments of empirical studies may not adequately capture the complexities of face-to-face communication, where nonverbal cues, such as body language, and other adaptive strategies can significantly enhance intelligibility. Furthermore, most studies have not accounted for the natural, reciprocal adjustments that occur in real-world interactions, where participants continuously modify their communication based on mutual feedback.

2.5. Previous studies

Intelligibility of English, be it British or American, has attracted the attention of research scholars. This has been studied with purpose of testing intelligibility of native and non-native speakers of English.

There are several existing intelligibility studies the majority of which have focused on how intelligible L2 speakers are to native speakers. Bansal (1969) carried out a pioneering study on the intelligibility of Indian English. The purpose of Bansal's research was to examine various speech samples of educated Indian English speakers and to arrive at the intelligibility of their spoken English compared to the English spoken by native speakers to native and non-native users of English. His work was comprehensive and successful in giving shape to Indian English.

Smith and Rafiqzad (1979) investigated intelligibility across non-native English speakers in eleven countries. They found a high level of consistency among listeners in the sense that a speaker found to be highly intelligible in one country was likely to be judged similarly in another country.

Salivendra Jaya Raju (2005) investigated mutual intelligibility of English among different nationalities. His work aimed at examining intelligibility of English by global participants and cross- checking the mutual intelligibility of English between the subjects of different nationalities correlating the phonetic features of the



speakers with the listeners' responses. The study has come up with interesting important findings and facts for researchers, teachers, communication language policy makers and communication experts.

The study of intelligibility of English sounds has been researched to a considerable extent. In the studies so far, it was found that the intelligibility of English sounds varies depending on the intelligible than vowels, and within vowels, monophthongs were easily understood more than diphthongs (Jin & Liu, 2014). These authors recoded 64 Chinese and Korean university students' English speech specimens that were played back to 60 American native speakers. The study concluded that consonants were more intelligible than vowels.

A study conducted by Liu and Jin (2013) whose focus was on the intelligibility of vowels of American English. This study investigated the intelligibility of native and non-native speakers in quiet and noise environments. It recruited 12 participants' English speech samples of L1 Chinese and Korean natives, recorded in six sensation levels from zero dB to 10 dB. The findings of this study showed that the intelligibility failure volume was greater among Korean and Chinese participants than the native Americans owing to noise background.

Abdulkhalik (2018) carried out the most relevant study to our investigation with an aim to offer a phonetic description of the English spoken by Yemeni Arabic speakers and its intelligibility in a global setting. The international context of the study lies in having participants of different and several linguistic backgrounds. The study corpus contained two-word lists and guided and spontaneous connected speech samples rendered in English by 20 Yemeni Arabic speakers, covering segmental, suprasegmental and other features of Yemeni English and its intelligibility in an international setting. The recorded speech specimens were played to fifty listeners both native and non-native speakers of English. The findings revealed that intelligibility of Yemeni English both at the segmental and suprasegmental aspects was hindered to varying degrees owing to L1 influence, fluency, familiarity with new global English varieties, language attitudes, speech rate, among others. There were serious issues in speech sounds, mainly vowels hindering their intelligibility, along with other suprasegmental issues pertaining to word stress, rhythm, weak forms, sentence stress, and intonation, assimilation, linking and contracted forms.

3. Methodology

The methodology followed in this study involves the following:

3.1. Research design:

A qualitative quantitative approach is adopted. It allows for an in-depth exploration of the impact of the study speakers' L1 influence on the intelligibility of their spoken English to Indian listeners. The research



focused on the subjective experiences of participants, both speakers and listeners, their productions and perceptions, and the overall intelligibility of the English spoken by five Ibbi Yemenis to ten Indian listeners.

3.2. Test Material

For the speaking task recorded, a word list was designed as a test material. As mentioned earlier, the list contained sixty-seven words divided into four categories. Care was taken to ensure that all English segments (vowels and consonants) occurred in all positions (initially, medially, and finally). It was made sure that the word list did not contain any difficult words. Regarding the listening procedure, worksheets based on the original word list were designed in such a way that two written options as well as a third option involving filling up the blank with whatever word is perceived if not one of the previous two options. Besides, another feedback sheet was designed for the overall assessment of listeners' understanding of each speaker. The original word list of speakers and listeners' worksheets are available upon a reasonable request.

3.3. Participants

3.3.1. Speakers

Since the study is on the intelligibility of the English spoken by Yemenis, five Yemeni male speakers, aged between 27 and 33, from the city of Ibb, Yemen, were chosen for the study. All five speakers were freshers pursuing their postgraduate studies in Hyderabad, India in the field of physics and computer sciences in various universities in Hyderabad. None of them had lived overseas for any length of time except for India recently. It was ensured that none of them had any formal training in phonetics. All five speakers displayed typical features of Yemeni English pronunciation such as the use of /b/ for /p/ and the absence of the diphthong /əʊ/. Besides, all the speakers reported no speech disorders.

3.3.2. Listeners

Ten Indian male listeners from the Department of Arabic studies, EFL-University, Hyderabad were selected purposefully for testing the intelligibility of the recorded speech samples of English words by the five Yemeni speakers. They were all postgraduate, aged between 22 and 28. The first five listeners were from different parts of north India while the last remaining five represented different parts of south India.

3.4 Procedure: Recording Sessions of the speakers

Recording sessions took place in different places using an apple iPhone 5 voice memos recorder model A1428. The five speakers were recorded individually. As far as possible, care was taken to record in closed and quiet rooms so as to minimize the outside disturbance. Before the recording session, each speaker was briefed about the purpose of the study and was given a personal-details form to fill in. Each one was given the word list to go through once ahead of the start of recording. Then he was asked to read out aloud the four sections of the list, word by word slowly and pause for a few seconds after each word. A break of 15 minutes was given after reading each section. After recording all the five speakers' speech samples, each speaker was given a



number. The sound files then were saved and later transferred into a wave format audio files in the phonetics lab, EFL-University, Hyderabad.

3.5 Procedure: Listening Sessions

The listening procedure took place in a quiet closed classroom in EFL-University, in two separate sessions. Each session involved a group of five listeners. First, they were given clear oral and written instructions of the task to be done. After that, they were asked to fill up the listener's particulars form provided to them. Using a laptop along with two loudspeakers, the recorded speech samples of the speakers were played back twice for the listeners word by word with pauses in between. Meanwhile, they were given worksheets (available upon request) based on the wordlist containing three options against each word. As they listened to each word played back twice, they were asked to put a tick mark against either of the first two options or write down whatever they perceive in the blank given as a third option. Once they finished listening to each speaker, they were given a feedback sheet (available upon request) in which they were asked to rate their understanding of each speaker.

3.6. Analysis

To measure how intelligible Yemeni English is to Indian listeners, the data analysis involved several steps. First, I transcribed the 67 words of each speaker based on auditory perception to cross-check their conformity to and divergence from RP. Second, the original word list and the listeners' responses were tabulated and correlated for each speaker. The analysis focuses on what speaker-listener linguistic and contextual factors could hinder the YE intelligibility. Table 1 below showcases the production of the first speaker and the 10 listeners responses.

Table 1.

Word list 1 and listeners' responses for speaker 1

S.No	Original word	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	Correctly perceived
1	Oil	OL	✓	OL	✓	OL	✓	OL	✓	✓	oyu	5
2	Eight	At	aid	At	aid	Aid	aid	Aid	aid	Aid	Aid	✓ 1
3	Earplug	hair	hair	hair	hair	air	hair	hair	air	air tight	empl	0
		black	black	black	black	black	black	black	bag		y	
4	Either	Weath	weath	✓	Leathe	Weath	weath	✓	ever	Weathe	✓	3
		er	er		r	er	er			r		
5	Air	Ear	✓	ear	✓	Ear	pay	earlier	a	✓	✓	4
6	Okay	✓	✓	oh!	✓	✓	✓	oh! key	✓	✓	✓	8



Key													
7	English	✓	✓	✓	✓	✓	✓	✓	anguis	✓	✓	✓	9
									h				
8	End	and	and	and	✓	and	earth	And		✓	and	ant	2
9	Earning	✓	✓	Earring	✓	✓	earring	eveni	✓	✓	✓	6
									ng				
10	All	owl	owl	owl	Owl	owl	owl	Owl	✓	owl	oam	1	
11	Aunt	✓	ant	ant	Ant	ant	ant	Ant	ant	find	art	1	
12	Ooze	owes	whos	whos	Lose	lose	hoze	Horse	whos	whose	✓	1	
		e	e						e				
13	About	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10
14	Often	✓	✓	✓	✓	offer	offer	Oxen	offer	✓	✓	✓	6
15	Boil	poem	poet	coil	✓	coil	✓	Poem	going	✓	owel	3	
16	Underse	embas	emba	under	Embas	embas	embas	embas	emba	and	emba	0	
	a	sy	ssy	ceil	sy	sy	sy	sy	ssy	there's	ssy		
									she				
17	Pot	boat	boat	boat	Book	boat	boat	Boat	boat	bought	oat	0	

A close look at Table 1 above reveals some insights of the study results in terms of influence of L1 phonological segmental system in impeding correct pronunciation resulting in low intelligibility level of participants' spoken English. The absence of the voiceless bilabial plosive /p/ in the speaker's L1 phonemic inventory strongly supports the finding that L1 phonological nature plays a vital role in hindering the speaker's L2 phonetic segmental intelligibility. Listener's familiarity with interlocutors and new WE varieties is another factor influencing the intelligibility of the English spoken by the five Ibbi Yemenis under focus as will be discussed further in the following section.

The tick mark (✓) in the above table indicates that the word was perceived correctly while the other written words in the table by listeners indicate wrong perception resulting in intelligibility failure. The last column gives the total correct answers for each word out of ten. Moreover, in Table 2 below, the number of correct words for each speaker perceived by each listener out of sixty-seven was calculated and tabulated. The words figured out correctly by listeners out of six hundred seventy words of the ten listeners for each speaker were calculated and the percentage of each speaker's intelligibility to the ten listeners was given in the last column using the following equation:

$$x = \frac{\text{Total correct answers}}{670} \times 100.$$

4. Results

First, I present the results of the study and I discuss them in the following section. Table 2 summarizes the ten listeners' total correct answers and intelligibility percentage for the five speakers.

Table 2.

Showing listeners' total ability scores to comprehend the five speakers' pronunciation and its intelligibility percentage.

Ls	L 1	L 2	L 3	L 4	L 5	L 6	L 7	L 8	L 9	L 10	Total	%
Ss												
S 1	24	27	13	33	21	26	21	25	39	34	263	39.3%
S 2	30	31	22	39	23	34	32	37	46	45	339	50.6%
S 3	24	28	26	21	20	26	27	28	39	33	272	40.6%
S 4	22	26	12	20	23	34	31	27	42	37	274	40.9%
S 5	26	29	27	27	26	34	42	33	38	30	312	46.6%
Total: 1460												43.6%

Table 2 illustrates the results of the study in terms of the level and percentage of the five Yemeni English speakers' intelligibility to the ten Indian listeners. The table clearly indicates the evident sharply decreased intelligibility scores below 50% except for speaker 2 with 50.6 %, owing to multiple factors hindering YE intelligibility including speaker's L1 background, phonological factors, listener's familiarity with interlocutors and new WE varieties.

Additionally, the listeners' feedback sheets concerning their understanding for each speaker were given in a tabular representation as illustrated in Tables 3 in terms of being Es (Easy), NEs (Not so Easy) and Ds (Difficult) to understand. Then listeners responses were calculated in terms of the total number of Es (Easy), NEs (Not so Easy) and Ds (Difficult) as depicted in Table 3 below:

Table 3

Listeners feedback overall numbers of speakers' intelligibility as Es (Easy), NEs (Not so Easy) and Ds (Difficult)

Speakers	E	NE	D
S 1	5	5	0
S 2	6	4	0
S 3	1	4	5
S 4	2	6	2
S 5	5	5	0

The higher the number of Es and the lower the number of Ds, the best intelligible the speaker is to the listeners; and the higher the number of Ds and the lower the number of Es, the worst intelligible the speaker is to the listeners. The listeners' feedback sheet table was correlated with their work sheets.

5. Discussion

As a reminder, this study empirically measures how intelligible the English spoken by Ibbi Yemenis (Expanding Circle Variety) is in international Indian context (Outer Circle Variety) based on some possible



speaker-listener linguistic and situational factors hindering intelligibility and effective communication. Discussion of the results will be based on the following criteria. The intelligibility of each speaker to all ten listeners and the overall intelligibility results from best to worst intelligible will be brought into picture in the discussion. Then some possible speaker factors hindering intelligibility including L1 phonological segmental aspects, familiarity with words and fluency will be discussed. Finally, listener linguistic situational factors such as familiarity with new varieties and interlocutors will be presented.

Reduced overall intelligibility of the English spoken by Ibbi Yemenis to Indians: Out of the five Yemeni speakers recruited in the study, only one speaker (S2) was hardly 50.6% intelligible to the 10 Indian listeners, while all other four speakers demonstrated intelligibility failure with scores below 50%. The rate of their English intelligibility is below expectations. The five speakers' word-wise intelligibility percentage to all ten listeners on a scale starting at 0% and ending at 100% given in the table 4 below illustrates the lowered intelligibility percentage contrary to expectations. The numbers given against each speaker indicate number of words and the scale 0% to 100% stands for listeners' variable where 0% means no one, 10 % means 1 listener, 20% means 2 listeners and so on till listener 10.

Table 4

showing intelligibility scale percentage of speakers' words to listeners

% Ss	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Speaker 1	14	8	5	6	6	5	8	3	5	1	6
Speaker 2	10	4	5	6	3	7	4	9	4	8	7
Speaker 3	16	6	4	4	6	8	5	4	6	4	4
Speaker 4	9	8	9	6	4	9	4	6	7	3	2
Speaker 5	10	6	8	8	3	3	6	5	2	9	7

Table 3 above shows clearly the intelligibility scale from 0 % to 100 % for all words by five speakers to all ten listeners. It is obvious that speaker 1 is the worst intelligible given that he topped the intelligibility scale with the least correct words perceived by listeners from 50% onwards. Only 28 words out of 67 were intelligible to listeners' from 50% onwards. Speaker 3 and speaker 4 come next with 31 words each perceived correctly on the scale 50% to 100%. Speaker 5 scored 32 correct words perceived by listeners. Speaker 2 only scores best among the five speakers in terms of intelligibility with higher figures from best to least intelligible as shown above though it looks similar to that of speaker 5 in 0% and 100% intelligible. The difference of values comes in between. He scored 39 on the scale starting at 50% and ending at 100%. The surprisingly low rate of intelligibility of Yemeni speakers to Indian listeners is attributed to speakers' mispronunciation in one hand, and to other factors hindering intelligibility such as familiarity of words, L1 interference, etc on the other hand.

The general discussion of the overall intelligibility of total correct words of Yemeni speakers to Indian listeners is best captured in Table 2 above illustrating the total number of words of each speaker perceived



correctly by each listener along with the grand total and overall percentage of intelligibility. The general total figures given in table 2 support the finding in table 3 above that discusses the intelligibility of speakers' words in depth to all listeners. In both the intelligibility of each speaker to the ten listeners is the same in order with the following percentage from least to most intelligible: speaker 1= 39.3%, speaker 3= 40.6%, speaker 4= 40.9%, speaker 5= 46.6% and speaker 2= 50.6%.

Speakers' L1 (Yemeni Arabic) background impact on the intelligibility of their English:

As illustrated in the analysis of the data (Table 1), the influence of Yemeni Arabic dialect impeded the correct pronunciation of specific English phonemes in the speaker's speech samples, thereby exerting an impact on the international intelligibility of their spoken English. The transfer of speakers L1 features into their L2 (English) is a significant factor that hinders intelligibility. Yemeni Arabic does not have sounds like /p, v, Θ, Ε, Ι, e, A:/, /etc. All tabulated data of the five speakers reflect problems remarkably in /p/ realized as /b/, /v/ realized as /f/, /Θ/ realized as /θ/, /Ι/ produced as /i:/ among others. Diphthongs are monophthongized. Therefore, the absence of these phonemes in the speakers' L1 phonetic system features in their L2 English pronunciation, thus making them unintelligible to international audiences.

Speakers' unfamiliarity with some words: The selection of words was made in such a way that all words are familiar to any active user of English. However, it turned out that some words were unfamiliar to speakers on grounds of poor English fluency and proficiency. Such unfamiliarity affected speakers' pronunciation, thereby hindering their international intelligibility. Word like 'earplug', 'genre', 'curious', 'undersea', 'fur', and 'rouge' were the most unfamiliar ones to speakers, being mispronounced and the least perceived accurately by all 10 listeners as indicated in the listeners' feedback worksheets. These words were zero perceived in most of the cases.

Listeners' familiarity with new English varieties and interlocutors: As mentioned earlier, the listeners were divided into two groups each comprising five members: south Indians and north Indians. It turned out that the speech samples of the five Yemeni speakers were more intelligible to south Indians than north Indians. (Data is available upon request). The simple explanation for this finding is the fact that Yemeni learners come for education more frequently to south India educational institutions and are likely engaged in active interaction with their Indian peers. This kind of interaction have resulted in some sort of familiarity with the Yemeni English variety and interlocutors, making resulting in better intelligibility when compared to north Indians.

6. Conclusion

This study has investigated the intelligibility of the English spoken by Ibbi Yemenis to Indian listeners. Word lists comprising sixty-seven words divided into four categories were designed, ensuring that all English



segments (vowels and consonants) occurring in all positions (initially, medially, and finally). For listening, worksheets based on the original word list were prepared. Besides, another feedback sheet was developed for the overall assessment of listeners' understanding of each speaker. Five Yemeni male speakers, hailing from Ibb, Yemen, pursuing their postgraduate studies in Hyderabad, India, were chosen for the study. All five speakers displayed typical features of Yemeni English pronunciation. Recording sessions took place in quiet different places using an apple iPhone 5 voice memos recorder model A1428. The five speakers were recorded individually. The listening procedure took place in a quiet closed classroom in EFL-University, in two separate sessions, each involving five listeners. The recorded speech samples of the speakers were played back twice for the listeners' word by word with pauses in between. Meanwhile, they were given worksheets based on the wordlist containing three options against each word. As they listened to each word played back twice, they were asked to put a tick mark against either of the first two options or write down whatever they perceive in the blank given as a third option. The analysis was both qualitative and quantitative, involving phonemic transcription of words based on auditory perception and then tabulating and correlating speakers' word lists and listeners' feedback sheets.

The finding showcasing that the overall low intelligibility percentage of the English spoken by Ibbi Yemenis was below 50%, with only one speaker (S2) scoring 50.6% is alarming and necessitates the need for intervention. The fact that such low percentage of such reduced intelligibility of the English spoken by Ibbi Yemenis to the 10 Indian listeners highlights the impact of underlying factors in impeding the intelligibility of the English spoken by Yemenis in global settings. The influence of speakers' L1 Yemeni Arabic phonemic system is the most notable factor, impeding their articulation of specific segments and hence hindering their spoken English. This calls for intervention to overcome phonetic hurdles to boost the intelligibility of the English spoken by Yemenis. The fact that speakers' low proficiency in English, listeners' unfamiliarity with the English spoken by Yemenis is correlated with the finding that the five Yemeni speakers were more intelligible to south Indian listeners than those of the northern part.

Given these findings, Yemeni English intelligibility is impeded by segmental phonetic hurdles owing to L1 interference. Such low intelligibility requires practical interventions to optimize English teaching models, thereby enhancing global communication and furthering international cooperation. In this study, I propose that enhancing Yemeni English intelligibility in global settings is vital for facilitating cross-cultural communication and shaping global English education, providing insights into effective teaching methods and assessment standards that accommodate diverse student backgrounds. This in turn extends our understanding of the diversity and complexity of global English, ultimately supporting the development of English as an international language.

7. Limitations and future research

This study restricts itself to a number of aspects. It investigates the intelligibility of the English spoken by Yemenis only at the segmental level. It examines the recorded speech samples of five male Yemeni speakers of English from the city of Ibb. The study data are limited to 67 words to investigate segmental (consonant and vowels speech sounds) aspects. A more elaborated study could include suprasegmental aspects such as word stress, connected speech features, reductions, sentence stress, and intonation. Besides, RP (Received Pronunciation) has been taken as standard for the purpose of comparison while transcribing the speakers speech samples. Future studies may incorporate both American English and RP as standard reference. For practical reasons such as time constraint, only five Yemeni speakers and 10 Indian listeners were included in the study. A more comprehensive study could include bigger sample in terms of more speakers and international listeners, and both genders (males and females). Another limitation is that the study investigates the intelligibility of the recorded English words to ten male Indian listeners (five from north and the other five from south India), all in the Department of Arabic Studies, EFL- University, Hyderabad, India. A final limitation is that the analysis of the data was done phonemically on the basis of auditory perception. Future studies could consider corroborating acoustic correlates analysis methods to aid auditory perception

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