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## Factors Influencing Intelligibility and Comprehensibility: A Critical Review of Research on Second Language English Speakers

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## **Factors Influencing Intelligibility and Comprehensibility: A Critical Review of Research on Second Language English Speakers**

### **Introduction**

Due to various social, economic and political reasons, there is a widespread use of English globally. It is estimated that about 1.5 billion people (i.e., 20% of the world's population) speak English, of whom only about 360 million people are native English speakers (Lyons, 2017), while others use English as a second language (ESL), English as a foreign language (EFL) or English as a *lingua franca* (ELF). In terms of attitudes towards English variations, received pronunciation (RP) plays a pivotal role. Even though RP is spoken by less than 3% of the population of the United Kingdom (UK), it still holds power and prestige in the UK and wider social circles (Rose, 2020). In modern culture, regional varieties of English are thriving and linguistic diversity is gaining more attention. In fact, with the global spread of English, a frequently voiced concern is the possibility that speakers of different varieties of English may soon become unintelligible and incomprehensible to one another (Smith & Nelson, 1985). Hence, enhancing intelligibility and comprehensibility must be approached cautiously and examined critically by researchers, TESOL education scholars, and ELT practitioners, especially the effectiveness of current practices as well as the fact that much still needs to be known to inform pedagogical implications in this arena.

These English varieties have led to the paradigm of Global Englishes, which is an umbrella term to describe the ideologies of ELF and World Englishes in diverse sociolinguistic contexts (Galloway, 2017). Barrass et al. (2020, p. 2) suggested that Global Englishes literature 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 (L2) 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. This essay thus focuses on research on intelligibility and comprehensibility of L2 speakers, investigates the factors that influence these, and makes recommendations for how intelligibility and comprehensibility can be improved. It begins by defining the terms and providing a critical account of prior studies. Based on the influencing factors, recommendations for enhancing intelligibility and comprehensibility will then be discussed.

### **Definitions**

Though the term “intelligibility” is generally associated with comprehensibility, they are not interchangeable. Smith and Nelson (1985) defined intelligibility as “word/utterance recognition” (p. 334), that is, how much utterances are understood, while comprehensibility refers to how easily L2 speech is understood (Derwing et al., 2008). Comprehensible speech might not be intelligible. For example, a listener may use contextual understanding to compensate for unrecognisable messages (Field, 2003). Similarly, an intelligible utterance may be incomprehensible due to societal stigma or accents. However, Gallego (1990) suggested potential comprehensibility issues might be camouflaged by intelligibility problems. Studies to

date provide inconsistent findings on their correlation, ranging from moderate correlation (Derwing & Munro, 1997) to no correlation (Kim, 2008).

### **Critical Review of Factors Influencing Intelligibility and Comprehensibility**

Levis (2005) reconceptualised pronunciation from a variety of perspectives, such as sociolinguistics, psycholinguistics, and band critical ethnography, and proposed the World Englishes speaker-listener intelligibility matrix which demonstrates interactions in various contexts (see Figure 1 below). The bulk of studies on intelligibility and comprehensibility in World Englishes contexts have privileged Kachru's (1985) *Inner Circle*; that is, native speakers (NSs) are the predominant judges of intelligibility and comprehensibility (Jenkins, 2003) and considerable literature has focused on how L1 users rate non-native speakers (NNSs) in the *Outer Circle* or *Expanding Circle*. Pickering (2006) suggested it is an inheritance that both responds to and reinforces inequalities in World Englishes. This monolingual bias is criticised, as L1-L1 intelligibility is not necessarily higher than ELF intelligibility (Deterding, 2012). Barrass et al. (2020) emphasised that many studies position L1 speakers as the likely target interlocutor despite evidence that L2-L2 interaction may be more common.

**Figure 1**

*World Englishes Speaker-Listener Intelligibility Matrix (Levis, 2005, as cited in Pickering, 2006, p. 221)*

		LISTENER		
		Inner Circle (IC)	Outer Circle (OC)	Expanding Circle (EC)
SPEAKER	Inner Circle	<i>IC-IC (NS-NS)</i>	IC-OC	<i>IC-EC (NS-NNS)</i>
	Outer Circle	OC-IC	OC-OC	OC-EC
	Expanding Circle	<i>EC-IC (NNS-NS)</i>	EC-OC	<i>EC-EC (NNS-NNS)</i>

While numerous studies have relied on the judgement of L1 listeners, there is a paradigm shift given the popularity of ELF and the fact that the majority are L2 users (Pennycook, 2017). Smith and Nelson (1985) summarised 163 studies on intelligibility and comprehensibility during the period 1950-1985 and stated that “native speakers are no longer the sole judges... not always more intelligible than non-native speakers” (p. 333). They highlighted the importance of interaction and pointed out some influencing factors, such as familiarity with English varieties and topics, language proficiency, speed, and listeners’ involvement and expectations. Although some original gaps were outlined in Smith and Nelson, it is hard to claim that it is a systemic review as it is unclear how the studies were qualitatively or quantitatively analysed. Pickering (2006) reviewed intelligibility studies and suggested intelligibility in ELF interaction was qualitatively different from that in native speaker-based contexts in which processing contextual factors including speaker, listener, and environmental factors vary with diverse settings (Deterding & Kirkpatrick, 2006; Meierkord, 2004).

Prior literature has demonstrated that intelligibility and comprehensibility are influenced by a broad range of variables. When judging intelligibility and comprehensibility, both native speaker and non-native speaker listeners consider not only pronunciation- and fluency-related aspects, which contribute to attitudes towards L2 accents, but also grammatical, lexical, and discourse-based factors as well as contextual and situational variables. The selection of prior studies is mainly based on the range of publication years (1980s-2020) and nature of speakers (L2) and language (English). Table 1 summarises some common influencing factors found in previous research.

**Table 1***Factors Influencing Intelligibility and Comprehensibility of L2 Speakers*

<b>Factors</b>	<b>Research</b>
<i>Speaker factors</i>	
L1 background	Crowther et al., 2015; Derwing et al., 2008; Derwing & Munro, 1997; Kang, 2010
Segmental/phonemic factors	Barrass, 2017; Barrass et al., 2020; Bent & Bradlow, 2003; Brown, 1991; Catford, 1987; Derwing & Munro, 1997; Deterding, 2005; Jenkins, 2000, 2003; Kennedy & Trofimovich, 2008; Winke et al., 2013
Suprasegmental/prosodic factors	Anderson-Hsieh et al., 1992; Baker et al., 2011; Field, 2005; Kang, 2010, 2012; Kang et al., 2010; Pickering, 2001; Wennerstrom, 2000
Accents	Derwing & Munro, 1997; Kirkpatrick & Saunders, 2005; Tauroza & Luk, 1997
Speech rate	Anderson-Hsieh & Koehler, 1988; Kormos & Denes, 2004; Matsuura et al., 2014; Orikasa, 2016; Thomson, 2015
Fluency	Derwing et al., 2004; Iwashita et al., 2008; Kang et al., 2010; Thomson, 2015
Other linguistic factors (e.g., lexical, grammar, pragmatics, discourse structure)	Bergeron & Trofimovich, 2017; Crowther et al., 2015; Meierkord, 2004; Nelson, 1995; Tyler, 1992
Language proficiency and exposure to English	Derwing & Munro, 1997; Tyler, 1992

Interaction, involvement, and communication strategies	House, 2002; Seidlhofer, 2001; Smith & Nelson, 1985
<b><i>Listener factors</i></b>	
Familiarity with English varieties	Baese-Berk et al., 2013; Bradlow & Bent, 2008; Derwing & Munro, 1997; Foote & Trofimovich, 2018; Gass & Varonis, 1984; Isaacs & Thomson, 2013; Ludwig & Mora, 2017; Saito et al., 2019; Saito & Shintani, 2016; Sidaras et al., 2009; Wingstedt & Schulman, 1984
Familiarity with topics	Gass & Varonis 1984; Smith & Nelson, 1985
Familiarity with specific interlocutors	Gass & Varonis, 1984; Pickering, 2006
Attitudes	Derwing et al., 2002; Kang & Rubin, 2009; Lindeman, 2002; Lippi-Green, 1997; Rubin, 1992; Saito et al., 2019
Language proficiency	Eger & Reinisch, 2019; Ludwig & Mora, 2017; Matsuura et al., 1999; Saito et al., 2019; Smith & Nelson, 1985
<b><i>Contextual factors</i></b>	
Task complexity	Bergeron & Trofimovich, 2017; Derwing et al., 2004; Ejzenberg, 2000; Michel et al., 2007; Rau et al., 2009; Revesz, 2011
Situational factors	Kennedy & Trofimovich, 2008; Rogers et al., 2004; Rosenberg & Jarvella, 1970; Schmid & Yeni-Komshian, 1999; van Wijngaarden et al., 2002a, 2002b
Environmental factors (e.g., environmental noise)	Rogers et al., 2004; van Wijngaarden et al., 2002a; 2002b

### ***Speaker Factors***

**L1 Background.** Research on L1 influences on native speakers' intelligibility of L2 pronunciation has shifted from a perceptual "sieve" that biases learners (Trubetzkoy, 1939) to the contrastive analysis (Lado, 1957), speech learning model (Flege, 2003), structural conformity hypothesis (Eckman, 2004), and optimality-theoretic model (Escudero & Boersma, 2004). However, there appear to be inconsistencies between the roles of speakers' linguistic background and rater experience (i.e., speakers' L1 has neither positive nor negative effects on intelligibility

and comprehensibility). Compared to the studies focusing on only L2 speakers from a single L1 group (Winters & O'Brien, 2013) or conflated multiple L1s into a single group (Kang et al., 2010), Crowther et al. (2015) investigated L1 effects on ten native English listeners' comprehensibility of L2 English speakers' speech (L1=Mandarin, Hindi, Farsi [ $n=15$  each]) and suggested linguistic influences on comprehensibility depend on speakers' L1 background ( $p<.0001$ ). The results of Mandarin speakers were significantly less comprehensible than others ( $d=1.68-2.12$ ,  $p<.0001$ ), supporting Kang's (2010) research which showed Chinese and Japanese speakers had more frequent inappropriate word emphasis and stronger L2 accents than other L1s (e.g., Hindi, Russian, Arabic).

However, Derwing et al.'s (2008) longitudinal study of ESL learners (L1=Mandarin and Slavic [ $n=16$  each]) revealed that only the Slavic group's speech ratings improved over two years, and this might be due to the benefits of L1 transfer effect. In contrast, Derwing and Munro (1997) investigated the relationships among intelligibility, comprehensibility and accentedness of intermediate ESL learners (L1=Cantonese, Japanese, Spanish, and Polish [ $n=12$  each]). It was found that L2 accents did not interfere with the L1 raters' ( $n=26$ ) intelligibility, and no difference in intelligibility was reported based on the L1s' linguistic background.

A possible reason for the contrasting findings is that the participants had different L1 backgrounds in which there is no single linguistic variable universally predictive of the intelligibility for speakers from a variety of L1 backgrounds. Furthermore, speakers' exposure to English and the population of English speakers in different contexts varied differently. Various L1 raters' attitudes, exposure to English varieties, and education backgrounds (e.g., undergraduates in Derwing and Munro [1997]; English teachers in Crowther et al. [2015]) might also account for these inconsistencies.

### ***Phonological Factors***

A number of NS-NNS studies indicated that native speakers' intelligibility and comprehensibility more significantly related to prosodic factors than segmental effects (Anderson-Hsieh et al., 1992; Munro & Derwing, 1995). In contrast, research on interlanguage talk (ILT) and NNS-NNS (e.g., Deterding, 2005) generally found that phonological factors and pronunciation issues at the segmental level were major reasons for unintelligibility or incomprehensibility. Consisting of different phonemes, various functional load hierarchy/continuum and problematic phonological features have been proposed by Munro and Derwing (2006), Brown (1991), and Catford (1987). Based on observed communication between L2 English learners with varied L1s in classroom and social contexts, Jenkins (2000) suggested that consonants are more salient than vowels for ELF intelligibility and proposes Lingua Franca Core, which is a set of core phonological features that should be focused on in pronunciation teaching to maximise intelligibility in ELF interaction. However, her conclusions were drawn from *ad hoc* methods and ill-defined classroom data. Conversely, some researchers (e.g., Rose, 2020) emphasise that realisation of vowels should not be considered as a non-core feature. Recently, Barrass et al. (2020) investigated Mandarin L1-background L2 English raters' ( $N=65$ ) intelligibility and comprehensibility ratings of English L2 recordings of L1 Korean speakers' ( $N=14$ ) speech in ELF contexts. The findings revealed that the most problematic phonological features were epenthesis, substitution of nasals for plosives between vowels and sonorant consonants, and the consonant-vowel combination [wʊ]. With only one assessor to score listeners' rating of the recordings, however, the results should be interpreted with caution.

Contrasting the perceptions of L2 speakers' accent problems, several studies have shown that foreign accents (e.g., Singaporean in Kirkpatrick & Saunders, 2005; Cantonese in

Kirkpatrick et al., 2008) may not reduce intelligibility and comprehensibility. Kang et al. (2018) concluded that vowel and consonant divergence is a significant predictor of comprehensibility in L2-L2 contexts; however, certain phonemic errors may have a higher cost of understanding, and this error hierarchy may vary depending on listener, speaker, and contextual factors.

### ***Speech Rate and Fluency***

Orikasa (2016) examined the extent to which 31 Japanese L1 raters found different varieties of English (Korean, Mandarin, Vietnamese, and American English) to be intelligible. The U.S. female and the Vietnamese male were rated as relatively unintelligible, which was attributed to their rapid speech rate. Though the findings supported Matsuura et al.'s (2014) research and Anderson-Hsieh and Koehler's (1988) results that speech rate influenced comprehensibility, it should be noted that the sample size was small as there was only one speaker of each gender per variety. Furthermore, fluency is found to be correlated with comprehensibility (Thomson, 2015) in which breakdown fluency (Derwing et al., 2004; Kang et al., 2010) and repair fluency (Iwashita et al., 2008) are also associated with the comprehensibility of speech.

### ***Other Variables***

Though a great deal of research has revealed that pronunciation may be the greatest barrier to successful communication (Jenkins, 2000), other linguistic variables influence intelligibility and comprehensibility. Some studies show lexical variations (e.g., use of localised vocabulary) may impede comprehension (Nelson, 1995), whereas other researchers (e.g., Meierkord, 2004; Saito & Shintani, 2016) suggested syntactic forms and grammar cues play a smaller role in comprehensibility than phonological and temporal qualities. Other pragmatic

factors include listener-speaker mutual interactions, communication strategies (e.g., clarification, questioning), and involvement (House, 2002; Seidlhofer, 2001).

### *Listener Factors*

**Experience and Familiarity.** Studies on listener factors generally investigate the impacts of the listeners' background, such as experience and familiarity with various variables (e.g., exposure to English varieties, accents, topics, interlocutors). In terms of listener experience in L1, researchers (e.g., Bradlow et al., 1997; Nygaard et al., 1994) found that native listeners understand more words and sentences spoken by a familiar than by an unfamiliar speaker. Kennedy and Trofimovich (2008) investigated native listeners' ( $n=24$ ) intelligibility, comprehensibility, and accentedness of L2 speech based on their previous experience of L2 exposure to non-native speech and semantic context (i.e., degree and type of semantic information available). The findings indicated that experienced native listeners were more accurate when transcribing L2 utterances. Similar results were found by Winke et al. (2013) that L1 raters' prior L2 learning experience facilitated their comprehensibility.

Research on listener experience in L2 is relatively new, and mixed results have been found. Numerous researchers (e.g., Baese-Berk et al., 2013; Bradlow & Bent, 2008; Derwing & Munro, 1997; Saito & Shintani, 2016; Sidaras et al., 2009) have reported that greater experience of a multilingual environment and better familiarity with English varieties increase intelligibility and comprehensibility. Bent and Bradlow (2003) suggested both "matched interlanguage intelligibility benefit" (i.e., shared L1) and "mismatched interlanguage intelligibility benefit" operated between non-bilingual English speakers. However, the mismatched benefit is perhaps doubtful and similar investigations do not support their results (Pickering, 2006). Several studies demonstrated that there were no effects of listener experience. Unlike Bent and Bradlow, an

across-the-board “matched intelligibility benefit” was not found in Major et al. (2002) in which Chinese-accented English impeded Chinese listeners’ comprehensibility.

Similarly, Van Wijngaarden (2002a) reported Dutch listeners did not benefit from listening to their own non-native accent in L2. Munro et al. (2006) also suggested L2 accent familiarity did not correlate with intelligibility or comprehensibility. Training listeners in linguistics and cross-cultural awareness has been found to not affect comprehension or intelligibility (Derwing et al., 2002) and listeners’ beliefs about pronunciation have shown only little effect on intelligibility (Hayes-Harb & Watzinger-Tharp, 2012). Most studies investigate the impact of L1 on L2 speaker intelligibility and comprehensibility, whereas few examine the effect of differences in rater L1. Saito and Shintani (2016) investigated how raters with different L1 English varieties (North American and Singaporean English [ $n=10$  each]) perceived the comprehensibility of Japanese L2 English learners’ ( $N=50$ ) spontaneous speech samples differently. The results showed Singaporean raters’ greater experience of a multilingual environment and higher sensitivity to lexico-grammatical information increased the comprehensibility.

In terms of familiarity with the topic, prior research indicates listeners’ knowledge of the topic increases transcription accuracy (Gass & Varonis, 1984), and facilitates both comprehensibility and intelligibility of L2 speech (Kennedy & Trofimovich, 2008). Examining how multiple listener factors affected individual variability in L1 and L2 speech ratings, Saito et al. (2019) studied how a total of 120 L2 ( $n=110$ ) and L1 ( $n=10$ ) users differentially assessed the comprehensibility. The results revealed that the L2 raters differed in terms of their L2 proficiency, L1 profiles, prior experience, attitude, awareness, and metacognition. Multiple listener factors including L1, English proficiency, and sociocultural variables were also

identified in Matsuura et al.'s (2017) study, which investigated international intelligibility and comprehensibility of nativized English in Japanese. It is worth mentioning that though these studies aimed to explore multiple variables, it is unclear how these factors are correlated.

### ***Language Attitudes***

Several researchers (e.g., Kang & Rubin, 2009; Lippi-Green, 1997; Rubin, 1992) have suggested listeners' language and social attitudes, biases, stereotypes, and ethnic and cultural beliefs affect perceptions of communication and interactional success. Kim (2008) rejected the hypothesis that L2 students' negative attitudes toward non-native English-speaking teachers' foreign accents were the result of reduced intelligibility and interpretability. In fact, their perceived degree of foreign accent affected the perceived degree of comprehensibility. These negative attitudes might be due to their unjustified beliefs that a native accent was the sole ideal pronunciation. Lindeman (2002) also reported that the negative attitudes of North American interlocutors problematized their feedback to the Korean partners. Thus, listeners' language attitudes should be carefully considered before concluding, i.e., listeners might react negatively to certain accents and hence claim them to be unintelligible even when these features do not impede intelligibility (Lindemann, 2006).

### ***Other Variables***

The semantic context available and situationally-specific factors may also influence listeners' intelligibility and comprehensibility (Schmid & Yeni-Komshian, 1999). For instance, listeners tend to comprehend semantically predictable sentences better than semantically unpredictable ones (e.g., environmental noise; Rosenberg & Jarvella, 1970). Bent and Bradlow (2003) also found that listeners' L1 affected the intelligibility of speech marked by noise. Furthermore, task complexity has been found to affect comprehensibility, fluency, and accuracy

in which higher comprehensibility was found in conversational tasks than in monologic tasks (Bergeron & Trofimovich, 2017; Ejzenberg, 2000). Other variables include familiarity with a particular speech event and listener-specific factors (e.g., level of tiredness; Field, 2003).

However, there is scant research investigating these factors.

## **Critiques**

### ***Inconsistent Findings***

Generalisations of the findings are difficult considering methodical differences in various contexts. While some researchers (e.g., Kang & Rubin, 2009; Sheppard et al., 2017) have suggested that sociological, situational, individual factors (e.g., gender, age, listeners' language attitudes, speakers' confidence, environmental noise) may influence perceptions of intelligibility, little research demonstrates how non-linguistics factors are filtered to accurately assess L2 intelligibility alone. Moreover, although numerous influencing factors have been identified, to date there have been few consistent and conclusive findings demonstrating how various variables are inter-related and affect intelligibility and comprehensibility.

### ***Instruments***

In terms of methodology, while intelligibility is usually measured via transcription of speech (e.g., Sheppard et al., 2017), Likert scales are commonly adopted to measure comprehensibility (e.g., Isaacs & Thomson, 2013). Though Derwing et al. (1998) argued that these measurements tend to be reliable, the large variation of rating scale length might affect the research reliability (DeVelle, 2008). Moreover, it is worth noting that the experimental settings may not fully reflect the ordinary utterances in natural discourse situations. One common limitation of many studies is that participants were generally asked to rate prerecorded utterances (e.g., Zhang, 2015), instead of spontaneous speech in communicative and interactive settings.

The experiential or test conditions in empirical studies may not fully reflect face-to-face communication and real-world situations, where body language and other strategies can be used to enhance intelligibility. The majority of studies have not allowed for the natural tendency in real-world communicative contexts where interlocutors can adapt their interaction based on each other's feedback.

### ***Rater Effect***

Taken together, studies have shown that raters' L2 backgrounds and attitudes might influence their intuitive judgement of L2 speech, because such rater variability may inevitably change the quality of the linguistic representations that raters draw on when making subjective judgements of incoming linguistic input data (Bradlow & Bent, 2008; Saito & Shintani, 2016). Though it is crucial to identify the rater effect, raters' backgrounds and how these individual differences affect their judgement are not always clearly reported in some studies (e.g., Jung, 2010). It is suggested that appropriate measures should be taken (e.g., providing training) to mediate rater effect.

### ***Task Effect***

Many studies adopted a single task approach (e.g., Munro & Derwing, 1999; O'Brien, 2014; Saito et al., 2015; Trofimovich & Isaacs, 2012). Though it facilitates direct comparison, it may hinder our understanding of how L2 speakers' performance varies with task complexity (Bergeron & Trofimovich, 2017).

### ***“Native Norms”***

As mentioned above, the “native norms” position as the sole standard or benchmark has been criticised. Participants in many studies were native speakers, implying that L1 users' background would be different from interlocutors in students' real-life contexts, where L2 users

rely more on lexis, syntax, and context (Levis, 2018; Saito, 2011). A growing body of research indicates that many L2 speakers use English as a *lingua franca* and speak primarily with non-native speakers. Hence, pairs of L2 interlocutors should be revised in the context of Global Englishes, particularly in L2-L2 cross-cultural communication (Nagle et al., 2019). It is noteworthy, however, that L2 raters' language proficiency (e.g., lack of vocabulary and spelling skills) may influence their intelligibility when they complete a transcription.

### ***Pedagogical Attention***

Though it appears that the pedagogical implications of prior literature generally suggests that students should be exposed to more varieties of English and some problematic phonological features should be prioritised, some important questions remain and seem to be under-researched such as which varieties teachers should introduce and how teachers can effectively implement these approaches, particularly in traditional RP-oriented and assessment-based curricula contexts. It is also unclear how exposure to these features and varieties can significantly improve intelligibility. It is recommended that future studies explore how different pronunciation instructions actually influence intelligibility in various contexts.

### **Recommendations for Improving Intelligibility and Comprehensibility**

The above critical review highlights the speaker- and listener-related factors that contribute to the intelligibility and comprehensibility in Kachru's *Inner*, *Outer*, and *Expanding Circles*. A variety of pedagogical implications have thus arisen from these influencing factors. The inconsistent findings suggest intelligibility and comprehensibility may be a multifaceted phenomenon that is intricately tied to a range of speaker, listener, and contextual factors, which contribute to L2 learning implications. To improve learners' intelligibility, productive skills in second language acquisition (SLA) should be focused (i.e., to ensure students are understood by

their major L2 interlocutors). However, this does not mean learners need to mimic L1 standard accents, as many researchers emphasize that L2 speakers can be intelligible even if they have an accent. In terms of comprehensibility, it should be a focus on teaching receptive skills (i.e., to help learners to understand a variety of Englishes; Rose, 2020).

There is a conundrum of what the benchmark for intelligibility is. Traditionally, there is adherence to “standard” RP or Standard American. Following Kachru’s “paradigm shift,” there is a growing body of research suggesting adherence to Global Englishes, including World Englishes and ELF (e.g., local and codified variety of English). To narrow down the “conceptual gap” between ELT and ELF (Seidlhofer, 2001), both listeners and speakers are recommended to explore a variety of English in the *Outer* and *Expanding Circles*. Pickering (2006) suggested teaching English as an international language. Though many researchers advocate exposure to “pronunciation for international intelligibility” (Walker, 2005), teachers may be reluctant as they prefer RP or Standard American. Change in language attitudes of various stakeholders plays a role in effective curriculum reform. Appropriate training should be provided to mediate listeners’ biases, especially in high-stakes testing environments.

This leads to the question of which model is more appropriate, and student need should be the focus. While some researchers suggest speaker-oriented “comfortable intelligibility” (Kenworthy, 1987), others emphasize “listener-friendly pronunciation” (Kjellin, 2005). There is no single answer as to which is the best model. In essence, improvement of intelligibility and comprehensibility requires eclectic and holistic instruction sensitive to the variety of speakers’ L1 backgrounds and their major targeted listeners. Smith and Nelson (1985) emphasized that our speech needs to be “intelligible only to those with whom we are likely to communicate in English” (p. 333). Thus, teachers should make sure learners are intelligible, and perhaps then

teachers need to be focusing on the different kinds of sounds that seem to be making them more unintelligible to most listeners (Saito & Plonsky, 2019).

Furthermore, there are suggestions to prioritize a variety of features, such as Jenkins's (2000) *Lingua Franca Core* and Levis's (2005) "intelligibility principle." The inconsistent results suggest different foci, such as syllable structure, word stress, and fluency (Crowther et al., 2015); grammatical and prosodic proficiency (Derwing & Munro, 1997); specific segmental and suprasegmental features (Barrass et al., 2020); and intonation (Gumperz, 1982). Further studies are needed to explore how pronunciation instruction influences intelligibility and comprehensibility in various contexts.

## **Conclusion**

With a specific focus on L2 English speakers, this paper provides a critical review of research on intelligibility and comprehensibility and discusses a number of pedagogical implications. In general, past literature has suggested that intelligibility and comprehensibility vary with listener, speaker, and contextual factors. In addition, it appears that there is no single teaching practice can be generalised for all learners. As mentioned above, the prior studies contribute to our knowledge of influencing factors and provide educational implications; however, the inter-relationship between these factors are under researched. Numerous SLA pronunciation or phonology-related research studies (e.g., Darcy et al. [2020], Derwing [2020], Zhang and Yuan [2020]) have suggested that pronunciation instruction should be designed to help learners acquire what matters for their real-life use in the most efficient and effective way. However, research on the impact of L2 pronunciation instruction is in its infancy. It is hence recommended that future studies explore how instruction influences intelligibility and comprehensibility and what factors affect its effectiveness.

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