Swedish youths as listeners of global Englishes speakers with diverse accents: Listener intelligibility, listener comprehensibility, accentedness perception, and accentedness acceptance

Hyeseung Jeong[1*], Anna Elgemark[2], Bosse Thorén [3]

[1, 2, 3] Department of Educational Sciences and Languages, Institution of Individuals and Society, University West, Trollhättan, Sweden.

Keywords: global Englishes, Swedish youth learners, listener intelligibility, listener comprehensibility, accentedness perception, accentedness acceptability, implications for language education

Abstract

As reflected in the concept of *global Englishes*, English mediates global communication, where English speakers represent not merely those from English-speaking countries like UK or US but also global people from a wide range of linguistic backgrounds, who speak the language with diverse accents. Thus, to communicate internationally, cultivating a maximized listening proficiency for and positive attitudes toward global Englishes speakers with diverse accents is ever more important. However, with their preference for American English and its popular culture, it is uncertain whether Swedish youth learners are developing these key linguistic qualities to be prepared for the globalized use of English. To address this, we tested 160 upper secondary students for their *listener intelligibility* (actual understanding), *listener comprehensibility* (feeling of ease or difficulty), *accentedness perception*, and *accentedness acceptance* of six English speakers with diverse accents. The results showed that the intelligibility scores and perception/attitude ratings of participants favored the two speakers with privileged accents. However, no correlation was detected between their actual understanding of the speakers and their perception/attitude ratings, which often had a strong correlation with their feelings of ease/difficulty regarding the speakers' accents. This suggests the need for pedagogical intervention to help Swedish youths develop listening proficiency in diverse English accents and widen their views of English as a global contact language and its worldwide users.

1 Introduction

In this globalization era, English is not only the national language of certain countries, but it is also the most common contact language that mediates international communication among people from different linguistic and cultural backgrounds. Reflecting the vast plurality and diversity concerning where, and by whom around the globe the language is used, the concept of *global Englishes* has been introduced (e.g., Galloway, 2017; Jenkins, 2015).

In view of the global state of English, as in many other countries, the language is a compulsory school subject from Grade 3 onwards in Sweden (Swedish National Agency for Education, 2018). Through the curriculum reforms introduced in 2001 and 2011, the English syllabus for upper secondary school, administered by the Swedish National Agency for Education (2011), has promoted a global perspective for teaching and learning the language (Hult, 2017; Modiano, 2009). According to Hult (2017), the syllabus showcases a government policy that encourages a move "away from an

English as a foreign language perspective" (p. 271) and an advancement "beyond the British and American perspectives that have traditionally held sway in Sweden" (p. 277). The syllabus is instead aligned "with a contemporary understanding of English in applied linguistics," that may include "highlighting global linguistic variations in English and attending to the use of English for intercultural communication" (p. 277).

The currency and timeliness of the syllabus is evident in view of recent debates on how traditional English language teaching that focuses only on British or American English is incapable of preparing learners for the current use of English as a global contact language (see Bayyurt & Dewey, 2020; Rose & Galloway, 2019; Rose et al., 2020). In fact, the global perspective of this English syllabus is a response to the reality that, for Swedish citizens, English is primarily a contact language for international communication, both domestically and overseas, in different areas of society and private life (Björkman, 2011; Bolton & Meierkord, 2013; Hult, 2012; Kuteeva, 2014; Norrby, 2015). For example, by participating in the Bologna Process, Swedish universities have become increasingly internationalized, and English facilitates communication between international and Swedish lecturers and students (Björkman, 2018). Moreover, "English is used as an official language in a number of Swedish corporations in the private sector" (Sundqvist & Sylvén, 2014, p. 5).

By and large, the Swedish are known to be highly proficient in English (World Economic Forum, 2012). As of 2020, Sweden was ranked fourth only to the Netherlands, Denmark, and Finland by the EF English Proficiency Index (EF EPI, 2020) among 100 non-English L1-speaking countries, even ranking above countries where English is an official language, such as Singapore and South Africa. As a subgroup, Swedish youths have also received recognition for their English competence, as well as their strong motivation for learning the language (Henry & Cliffordson, 2015; Norrby, 2015). However, simply being a proficient user of English is not sufficient (Prodromou, 2008), where maximized listening comprehension and a positive attitude toward global Englishes speakers with diverse accents are also of great importance for intercultural communication (Matsumoto, 2011; Melchers et al., 2019). In this regard, current information about the relationship of Swedish youths with English in the existing literature does not provide a clear basis for assessing whether the global perspective of the national English syllabus has been successfully implemented. While Swedish youths show strong favoritism toward American English and its popular culture (Cabau, 2009; Eriksson, 2019; Henry et al., 2019), there is paucity of research on how they react to "other" English accents, with few studies indicating that young Swedish people feel negatively about unprivileged English accents (e.g., Kuteeva, 2014).

Particularly, to our knowledge, it has not yet been ascertained how Swedish youths perform as listeners of speakers of English as a global contact language or lingua franca with diverse accents, by determining their actual understanding, and their perceptions and attitudes in connection to that understanding. Our study seeks to fill this research gap by addressing the need for assessing whether the stated goals of the national curriculum are being achieved. To accomplish this, we adapted the concepts of *intelligibility* (actual understanding of speech), *comprehensibility* (degree of feeling comfortable in understanding an accent), *accentedness* (perceived degree of the accent), and *acceptability* (degree of acceptance of the accent). These concepts have been used extensively to evaluate second language (L2) learners'/users' pronunciation against a listener's judgment (see Thomson, 2018) but seldom to assess them as listeners of different global Englishes accents, which may have ecological validity, particularly in the context of international communication. Although there is an increasing trend in research on attitudes toward global Englishes speakers given the worldwide spread of English in order to help inform the curriculum innovation process (e.g., Fang, 2020; Lee & Drajati, 2020; Tsang, 2020), the reports are usually about attitudes emerging from

preconceptions of different accents; examination of listeners' attitudes toward accents in relation to actual understanding of the speakers, which this study seeks to do, is seldom found in the extant literature. Therefore, in addition to the novelty of the research topic, our study possesses the methodological significance of using these constructs from a new perspective.

2 Background

2.1 English for Swedish youths: Unproblematic?

A probable explanation for the high English proficiency of Swedish youths is the prevalence of the language in their lives. Like many other young Europeans, particularly those in other Scandinavian countries, Swedish youths develop their English through extensive exposure to and engagement with popular culture, as well as studying the language as a compulsory school subject (Cabau, 2009; Henry, 2019b). Often, the language mediates their leisure time activities, and they are surrounded by and eagerly consume English-mediated popular culture, including games, films, YouTube clips and channels, television series, music, news, online blogs, and literature (Sundqvist, 2011).

Therefore, for young Swedish people, English "generates immediate associations with imaginary worlds of glamour, celebrity, and consumer aspirations," "indexes pleasure and hedonism," and "triggers identifications with desirable products and desired identities" (Henry, 2019b, p. 24). Much of the popular culture that surrounds Swedish youths "has its roots in" the cultures of English-speaking countries, particularly American culture (Henry, 2019a, p. 75). Consequently, the younger generation is "greatly attracted by Anglo-American culture" (Cabau, 2009, p. 140). This tendency has been traced to schools; for example, in Henry et al. (2018), nearly all teaching strategies that upper secondary English teachers considered appealing to their students and, thus, effective to motivate their learning had a strong focus on privileged variants of English and their national cultures, particularly American English and its popular culture.

However, while popular culture may enhance the motivation to learn English, having major contact with the language through one national culture can result in a limited perspective of the language, its cultural history, and its users. The English of popular culture that Swedish youths admire represents "only a small fraction of the varieties of English, types of speakers, and culture that English users today encounter" (Matsuda, 2018, pp. 26-27). As highlighted in the national syllabus (Swedish National Agency for Education, 2011), most Swedish youths will eventually "need English to communicate with almost anyone in the global community," rather than merely "for personal development or cultural awareness," for which they need to develop "maximum scope of proficiency" through "wide exposure" (Melchers et al., 2019, p. 202). Although unchallenged and, in fact, endorsed through their school education (see Henry et al., 2019; Mohr et al., 2019), the orientations of young Swedes toward English and English-speaking culture may not be congruent with the global vision of the national English syllabus that aims to prepare them for "different social and cultural contexts, as well as [for] global studies and working life" (Swedish National Agency for Education, 2011, p. 1).

Thus, while proficient, Swedish youths may not be well prepared to use English in globalized settings as much as the vision of the national syllabus. Without pedagogical help "to experience diverse Englishes," they, like other English learners, "may be startled, surprised, confused, overwhelmed, or feel underprepared for such situations" and may even "develop negative attitudes toward such varieties that may interfere with their ability to engage in successful communication" (Matsuda, 2018, p. 29). In this vein, Kuteeva (2014) alarmingly reported that, while they are aware that English facilitates international communication, Swedish university students are often not ready

to accept and communicate with people who they think speak "non-standard" Englishes, as reflected in the following comment by one of her student participants:

> "I also wonder if it is really OK to let, e.g., Indian, Pakistani, Arabic, or Russian-speaking researchers teach. Their spoken English with a terribly strong accent makes it difficult for students to understand what is being said." (p. 337)

2.2 Are English learners taught to be good listeners of global Englishes accents?

Nascent research has begun to report the positive effects of exposure to diverse accents on learners' attitudes toward and interest in using English as a global contact language (e.g., Attamimi & Chittick, 2018). However, both Swedish youths and English learners in many other countries are still situated in instructional settings where native-speaker accents, especially the General American accent (GA) or the standard British Received Pronunciation (RP) accent, are the focus of teaching listening skills (Alonso-Herrero & Lasagabaster Herrarte, 2019; Sung, 2016; Tsang, 2019). Thus, "standard native-like English accents are ubiquitous and predominant in a lot of materials such as listening exercises" (Tsang, 2019, p. 581), and "exposure to different accents is not seen as an important part of the curriculum" (Sung, 2016, p. 192). This trend in listening instruction goes together with listening tests that primarily assess learners against standard native-speaker accents (Harding, 2012; Jenkins, 2020; Kang et al., 2018; Sifakis et al., 2020). Internationally recognized large-scale tests, such as the Test of English as Foreign Language (TOEFL) or the International English Language Testing System (IELTS), have begun to incorporate diverse English accents into listening tests (Kang et al., 2018); however, the inclusion of accent varieties is partial (Harding, 2012), and whether it has produced a washback effect on teaching practice is uncertain.

As Derwing and Munro (2014, p. 219) noted, "communication is a two-way street;" thus, gaining an understanding of an interlocutor's accent features is as crucial to being a good listener as having an intelligible pronunciation as a speaker. However, by focusing only on a couple of privileged English accents, the teaching of listening seems to keep learners from developing their knowledge of and ability to understand diverse accents. An indication of this are the iterative reports about the misunderstandings or communication breakdowns among L2 speakers caused by accent features distant from GA or RP (e.g., Deterding, 2013; Field, 2005; Jeong et al., 2020; Kim & Billington, 2016). Moreover, only learning to listen to a few native pronunciations (mostly RP or GA) seems to lead learners to develop negative attitudes toward "other" accents. In his study of university students' perceptions in Hong Kong, for example, Sung (2016) found that many of his participants did not want to be exposed to diverse English accents and expressed dislike of certain second-language accents, even though they are situated in an English-as-an-international-language context and, thus, are aware of the benefits of understanding diverse accents. Sung observed that "the belief that native-speaker English is the 'best' and the 'standard'," may have caused the interviewees to "evaluate non-native accents against the native-speaker yardstick" (Sung 2016, p. 196).

2.3 Intelligibility, comprehensibility, and perceptions and attitudes toward accentedness: Who can be assessed?

Intelligibility, *comprehensibility*, *accentedness*, and *acceptability* are constructs that have been operationalized to evaluate L2 speakers' pronunciation against a listener's understanding and perception (Thomson, 2018). Often, listener judges are native speakers (e.g., Kennedy & Trofimovich, 2008; Munro & Derwing, 2006) and more recently also L2 speakers (e.g., Jeong et al., 2020). While intelligibility, comprehensibility, and accentedness have been extensively adapted since Munro and Derwing's seminal studies (e.g., Munro & Derwing, 1995a, 1995b), acceptability is a

relatively new construct for measuring listeners' negative or positive attitudes toward perceived accentedness (e.g., Szpyra-Kozlowska, 2014; Tulaja, 2020).

Although researchers have not reached a consensus regarding the exact definitions of the four constructs, converging understandings of each construct have emerged. Intelligibility is the actual understanding of a speaker's utterance or intended messages, operationalized through the measurement of listener performance, such as scores from dictation or comprehension tasks (Derwing & Munro, 2015). In contrast, the other three constructs relate to the listener's subjective perception and attitude. Comprehensibility is a listener's feeling or experience of whether, and to what extent, the speaker's pronunciation is easy or difficult to understand. Accentedness is the listener's subjective perception of the degrees of nativeness or foreignness of a speaker's accent. Meanwhile, acceptability represents the extent to which a pronunciation is accepted by the listener; it is expressed through the listener's ratings of an accent, for example, in terms of the degree of annoyance/irritability (Szpyra-Kozlowska, 2014), correctness, likability, acceptability of pronunciation teaching purposes (Sewell, 2012), and acceptability for international communication (Li-Ann, 2008).

As oral communication is a process involving both speaker and listener, operationalizing listeners' judgment to assess a speaker's pronunciation has some rationale; however, using the constructs of intelligibility, comprehensibility, accentedness, and acceptability for assessing speakers has not been unproblematic. The central problem is the assumption behind using listeners' judgment to evaluate L2 speakers' accent features, which views that listeners' inability "to understand L2 speech is evidence of the L2 speakers' linguistic failures," and that L2 users are projected as the speaker group mainly responsible for communication breakdown and thus in need of pedagogical intervention (Lindemann & Subtirelu, 2013, p. 582). Against such an assumption, it has been argued that the measurement of the constructs reflects listeners' own expectations, beliefs, and psychological and linguistic attributions, although it has been assumed to be an indicator of a speaker's inherent accent features (Kang & Rubin, 2009; Lindemann & Subtirelu, 2013; Subtirelu & Lindemann, 2016; Zielinski, 2008).

More crucially, since what is determined by the four constructs is not the speaker's but the listener's performance, perception, or attitude, it can be straightforward and suitable to operationalize these four constructs to assess learners as listeners. This is particularly conceivable in the context of English as an international language, where learners need to develop "maximum scope of proficiency" through "wide exposure" (Melchers et al. 2019, p. 202). That is, learners who need to learn English for international communication will eventually encounter interlocutors with diverse accents; some of their interlocutors may be RP or GA speakers, but many may be speakers of varieties with phonological systems that are not congruent with the phonology of prestigious accents or speakers who maintain pronunciation features inherent in their first languages. Within all these possibilities, learners have very little or no control over the accents of their international interlocutors. Thus, there is ecological validity in utilizing the four above-mentioned constructs to identify their ability and inclination as listeners toward different accents, whereby pedagogical intervention for their perceptual training for diverse accents can be suggested.

3 The Study

3.1 Aim and research questions

Against this background, the present study investigated Swedish youths as listeners of diverse English accents in terms of their actual understanding, perceptions, and attitudes toward such accents.

To this end, we adapted the four constructs of intelligibility, comprehensibility, accentedness, and acceptability, which previous research has utilized to assess features of speakers' pronunciation. To explicitly emphasize that our study focused on learners as listeners, rather than speakers, by means of the four constructs, we intentionally labeled them:

- *Listener intelligibility* (LI)
- *Listener comprehensibility* (LC)
- *Accentedness perception* (AP)
- *Accentedness acceptance* (AA)

The research questions corresponding to our aim were as follows:

1. What are the LI, LC, AP, and AA of Swedish upper secondary school students for global Englishes speakers with diverse accents? Are there significant differences among the groups listening to different speakers?
2. What is the relationship among the LI, LC, AP, and AA of the listener groups of different speakers?

3.2 Method

3.2.1 Listeners

160 students (88 females and 72 males) in their second year of upper secondary school were recruited as listener participants with the help of four English teachers at three different schools in three cities in southern Sweden, who replied to our request letter. The students were from seven different classes at the schools, studying in the Social Sciences (*Samhälle*), Technologies (*Teknik*), Natural Sciences (*Natur*), and Economics (*Ekonomi*) programs. None of them reported hearing problems. Their mean age was 17.25 years, and they provided consent for participation according to Swedish ethics legislation. Their L1s were Swedish (117), Arabic (21), English (3), and other languages (19); however, all of them possessed sufficient Swedish proficiency to study in regular classes.

Through a follow-up survey after the main data collection, we found that students used English substantially outside of school, which is a common tendency among Swedish youths (see the background section). To the question of how frequently they used English outside of school, where "1" meant "none" and "9" meant "several hours every day," the mean rating was 6.2 (SD = 1.8). However, their extramural English use was much more receptive (listening or reading) than productive (speaking or writing), according to the 9-point self-reporting scale: robust t (95) = 15.5, 20% trimmed mean difference = 3.79, CI = 3.3, 4.4, $p = 0$, effect size = 0.8.

In addition, to ensure statistic validity of comparing listener groups for different speakers, we checked whether there was interaction between group effect on LI, LC, AP, and AA and three listener individual variables by means of robust two-way ANOVAs (see Mair & Wilcox, 2019 for robust statistics). These variables were: school grades (first self-reported as A to F, but eventually classified into high- and low-grades after consulting with their teachers); L1s (Swedish L1 and non-Swedish L1); and gender (male and female). Significant difference between high- and low-grade students as well as interaction between group effect and grades for LI and LC were detected (to be reported in the result section), conforming to a study by Harding (2008), who found that listeners' proficiency level can influence their performances and perceptions toward different accents. However, no difference was found between Swedish L1 and non-Swedish L1 students and between

male and female students for their LI, LC, AP, and AA, and these two individual variables did not interact with group effect either. Thus, they were excluded from further analysis.

3.2.2 Speakers

From the 15 candidates who expressed their interest in participation as a reply to our participant recruiting email, we selected six speakers whose L1s were Mandarin, Russian/Ukrainian, Tamil, Lusoga/Luganda, American English, and British English. The mean age of the six speakers was 44 years (range: 28–56), and they are hereafter referred to by their nationalities: Chinese, Ukrainian, Indian, Ugandan, American, and British. Five speakers were university lecturers, and the Ugandan speaker was a university student who used to be a secondary school teacher using English as her instructional language. The Ukrainian, Indian, and Ugandan speakers were females and the Chinese, American, and British speakers were males. Except for the Indian speaker who came to Sweden just a year ago at the time of her participation, other speakers had lived in the country for 7 years or longer.

The selected speakers met the following recruiting criteria. First, they were assessed to have typical accent features of their L1s, referring to Swan and Smith (2001) and Kortmann and Schneider (2004). Second, in view of previous studies on intelligibility of different accents (e.g., Kang et al., 2018) and to ensure the diversity of chosen accents, we selected two speakers from the Inner Circle, two from the Outer Circle, and two from the Expanding Circle according to Kachru's (1992) World Englishes Model. The American and British English speakers had pronunciation features that would be typically regarded as standard American and British accents (see Kang et al., 2018). However, given that the distinction between the Outer and Expanding Circles is becoming increasingly less distinct (Jenkins, 2015; Melchers et al., 2019), all the speakers could be simply classified as global Englishes speakers with diverse accents. In addition, as addressed later in the discussion section, our study does not claim that the speakers represent their own English varieties. However, they could be good, typical examples of global English speakers. This relates to the third, and most important criterion for the speaker selection, that is, our speaker participants represented English users that Swedish youths would easily encounter in university contexts, who use English as the main language to communicate with Swedish students, including during teaching, studying, and socializing.

3.2.3 Materials

Materials were the speakers' readings of the same texts, and the following are how the materials were prepared. First, two types of reading texts were prepared to measure the constructs via an assessment of the comprehension of an extended speech and the understanding of every uttered word (see Derwing & Munro, 2015, pp. 3–8 for the definition of intelligibility). The first type comprised 10 short passages from a previous Swedish National English Test (English 5), which was designed to test the understanding of the main idea, that is, determining the job of the person that each passage described. The second type comprised 40 true/false sentences adapted from Munro and Derwing (1995b) in a dictation test. Each sentence contained three to five content words that were mostly verbs, nouns, adjectives, adverbs, and one preposition ("through" in the sentence "people eat through their noses").

Then, each speaker undertook a 30-min to 1-h recording session at a soundproof studio during which they read the prepared texts. The session began with the collection of their demographic information through a simple computer survey. Before the recording, the speakers could rehearse and practice as much as they wanted. The texts were identically arranged for all speakers in a PowerPoint presentation: first passages and then sentences (one passage/sentence per slide). During the recording, the speakers were asked to read the texts as naturally as possible, without slowing down or

articulating too much. They sometimes read the same sentence or passage twice or more, voluntarily or upon request when necessary. The readings were recorded via a RØDE NP-USB microphone and the free software Audacity 2.4.0 (audacityteam.org) at a 44.1-kHz sample rate and a 16-bit resolution.

3.2.4 Test preparation

Each passage and sentence was recorded as a WAV file with a 0.5-s silence at the beginning and end. We selected 6 out of 10 passages and 20 out of 40 sentences for the tests by removing ambiguous passages and seeking even numbers between true/false sentences (see online supplement). Thereafter, the following steps were taken with each speaker's recording. First, to randomize questions (one passage or sentence for each question) for the individual listeners, we created two listening tests of each speaker's recording using Microsoft (MS) Forms: one for the main idea test including the passage reading, and the other for the dictation test of sentence reading. Second, as audio files cannot be inserted into MS Forms, we converted the WAV files into MP4 video files with a plain screen using MS PowerPoint, uploaded them to our YouTube Studio as unlisted, and then inserted them into the Forms. Third, in addition to the listening tests, we also created an MS Forms survey to collect demographic information. Finally, we created a Google blog with 12 pages containing links to the two listening tests and the demographic survey. We made two pages for each group and presented the links to the two tests in reverse order on each page.

Questions in the MS Forms were arranged as follows. To determine LI, the main idea test was a multiple-choice comprising one correct answer and four distractors randomized for different test-takers, with "I don't know" as the last option. Meanwhile, the dictation test required participants to type what they had heard in a box. LC and AP rating scales were presented after the main idea and dictation questions. The ratings for both the constructs used 9-point scales: "1" meant "very easy to understand" and "9" represented "very hard to understand" for LC (Munro & Derwing, 1995a, and adapted by many studies); for AP, "1" meant "no non-native accent at all" and "9" meant "very heavy foreign accent" (Hansen Edwards et al., 2018). To allow student participants to rate AA, four questions with a 9-point scale were presented. For the first AA rating (AA1), "1" and "9" meant "the accent was very pleasant to listen to" or "the accent was very annoying and irritating," respectively (Szpyra-Kozlowska, 2014). For the second rating (AA2), "1" meant "no pronunciation errors" and "9" meant "a lot of pronunciation errors;" for the third (AA3), "1" meant "I like the accent very much" and "9" meant "I do not like the accent at all;" for the fourth (AA4), "1" meant "the speaker has a high level of education and a high-status job" and "9" meant "the speaker has a low level of education and a low-status job" (Sewell, 2012). Later, for analysis, we reversed the LC and AA ratings.

3.2.5 Listening sessions

Each of the seven classes with 22 to 30 students was administered a listening session by the first and second authors. Although students were sitting in a classroom with other classmates who were also participating, they took the tests individually using their own laptops and headphones. We instructed them to listen to each passage and sentence only once, informing them that they would remain anonymous to us and that assessing individual performance was not our concern. After an introduction to the study's purpose and instructions for participation, each listener chose a paper from a box to be assigned an ID and a group. The group names matched the page names on the Google blog. Hence, although they were tested class by class, students could be randomly assigned into the 12 groups (6 speakers x 2 pages, featuring reverse ordered links to the two tests). Second, students were given the blog address from where they navigated to their own group pages and then to the tests

and the survey by clicking the links, following the order presented to them. All the listeners completed the two tests and the survey within 20–30 min.

Crucially, students were not informed of the profiles and language backgrounds of the speakers they listened to because knowledge of the speakers could be a preconceptual factor affecting listeners' test performances and ratings, as found by numerous studies on L1 listeners' perceptions and attitudes toward a speaker's accent, using matched- or verbal-guise techniques (see Lindemann & Subtirelu, 2013 for a survey of such studies). This methodological decision was important to examine listeners' perceptions and attitudes emerging from listening to a speaker, as well as to understand whether, and to what extent listeners appear to associate the accents that they hear with their preconceptual knowledge of and attitudes toward different accents.

3.2.6 Data analysis

We examined LI, LC, AP, and AA separately for the main idea and dictation tests. To operationalize LI, we used the percentages of correct answers from both the main idea and dictation tests: for the main idea, we took the percentage of correct answers against the total number of questions, and for the dictation, we used the mean percentage of the percentages of correctly dictated content words against the total number of content words for the 20 sentences (Kennedy & Trofimovich, 2008). We accepted typographical errors in the dictation test when it was clear that the target word had been correctly understood (e.g., "gazoline" instead of "gasoline" and "excelent" in place of "excellent" in the phrase, "Gasoline is an excellent drink"). As the ratings of LC and AP were completed once for each of the main idea and dictation tests, we used the ratings as they were to operationalize the constructs. As for the AA ratings, the inter-rater reliability of the four AA questions was as high as 0.812 for the main idea and 0.802 for the dictation; thus, the AA ratings for the two tasks were produced by averaging the four ratings.

After identifying that the data did not have normal distribution, we performed robust tests with the R WRS2 Package (Wilcox & Schönbrodt, 2015) and non-parametric tests in SPSS to obtain valid statistics and the power of normal distribution, as suggested by Conover (1999), Larson-Hall (2015), Mair and Wilcox (2019), and Turner (2014). To answer the first research question reported in Section 4.1, robust two-way ANOVAs were performed to determine whether there was a group difference (main effect) between LI, LC, AP, and AA, as well to check whether English grades, as a factor, interacted with the main effect, as discussed earlier with listener presentation. When a significant main effect was determined, robust pairwise between-group tests were conducted. Further, robust mixed ANOVAs were performed to ascertain whether there was a within-subject effect on LC, AP, and AA for the main idea and dictation tests and whether there was an interaction between the within-subject and the main group effects. Here, it should be noted that the WRS2 Packages do not calculate effect sizes for factorial ANOVAs. To address the second research question regarding the relationships among LI, LC, AP, and AA, non-parametric partial correlation tests were performed, controlling for English grades (see Section 4.2).

Our data is available as an online supplement.

4 Results

4.1 LI, LC, AP, and AA for six different speaker accents

This section reports the findings that address the first research question (see Section 3.1). Figures 1, 2, 3, and 4 present descriptive statistics for LI, LC, AP, and AA of the six listener groups, as well as

group and English grade interaction plots. Table 1 shows the outcomes of robust 2-way ANOVAs for group difference in LI, LC, AP, and AA and pairwise post hoc tests. In the table and figures, the listener groups are referred to by the abbreviations of the speakers they heard: Ch = Chinese speaker, Uk = Ukrainian speaker, In = Indian speaker, Ug = Ugandan speaker, Am = American speaker, and Br = British speaker. However, as reported in the method section, the listeners were not informed of the speakers' nationalities or L1s.

First, for LI, it should be considered that the LI scores for the main idea and dictation tests were incompatible. Thus, score differences for the main idea test of 6 questions and for the dictation test of 20 questions, presented in Figure 1, should be understood in the context of the nature of the tests. As seen in Table 1, there was no group difference in the main idea test; however, a difference appeared in the dictation test. The post hoc tests indicated that, overall, those listening to the American, British, and Indian speakers performed better than those listening to the Chinese, Ugandan, and Ukrainian speakers, and those listening to the American speaker performed significantly better than those listening to the Indian speaker. The effect of English grades was significant for both the main idea LI ($F = 40.97$, $p = .001$) and the dictation LI ($F = 47.64$, $p = .001$), indicating that high-grade students performed better than low-grade students. However, an interaction between group and grade was identified only among the dictation scores ($F = 33.95$, $p = .002$). The interaction plot in Figure 1 shows that the difference between the LI of high- and low-grade students while listening to the Ukrainian speaker was greater than that for the other speakers.

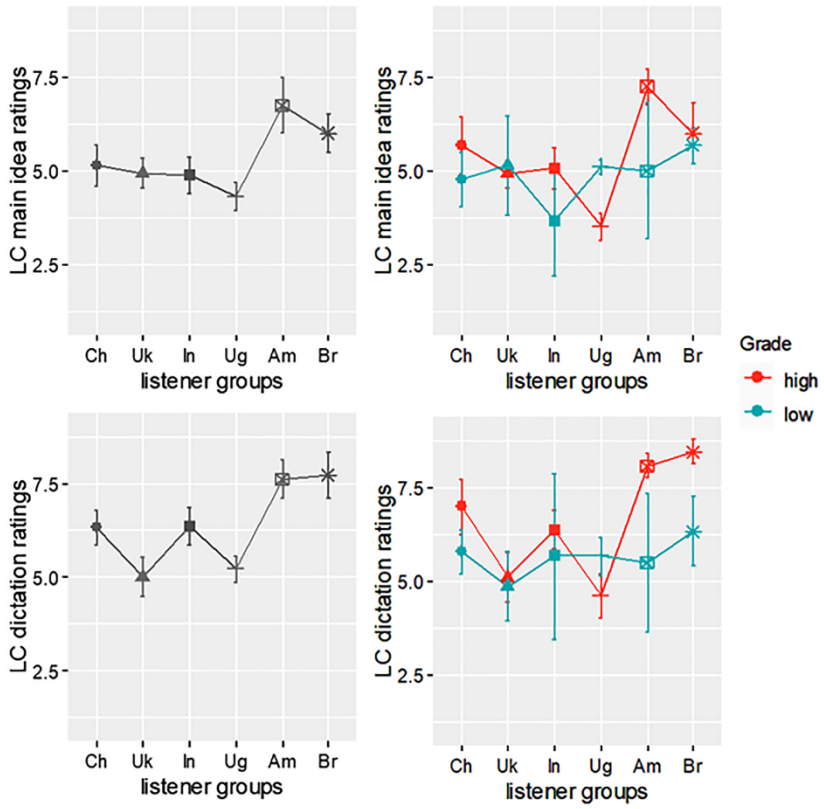

***Figure 1**: Listener intelligibility groups (left) and groups*English grades (right) plots using 20% trimmed means and standard errors: Note. Subject numbers are: Ch =23 (high = 10 & low = 13), Uk = 26 (high = 17 & low = 9), In = 27 (high = 24 & low = 3), Ug = 29 (high = 14 & low = 15), Am = 26 (high = 20 & low = 6), Br = 29(high = 19 & low = 10)*

Second, the LC ratings of those listening to the American and British speakers were significantly higher than the Ugandan speaker only for the dictation test but not higher than the other three groups (Chinese, Indian, and Russian speakers), among whom there was no statistical difference (see Figure 2 and Table 1). No English grade effect was observed for the two LC ratings, and a weak group-grade interaction was only found in the ratings after the dictation test (F = 16.79, p = .042). As shown in Figure 2, the LC rating difference between low- and high-grade students was most apparent among the American and British speakers' listeners. In addition, a robust mixed ANOVA showed that the LC rating after the dictation task was significantly higher than the LC rating after the main idea task (F (1, 27.91) = 9.59, p = .0044), although this within-subject difference had no interaction with the group/speaker effect. This means that the trends shown in the LC ratings for the main idea and dictation tests were similar as shown in Figure 2 and Table 1.

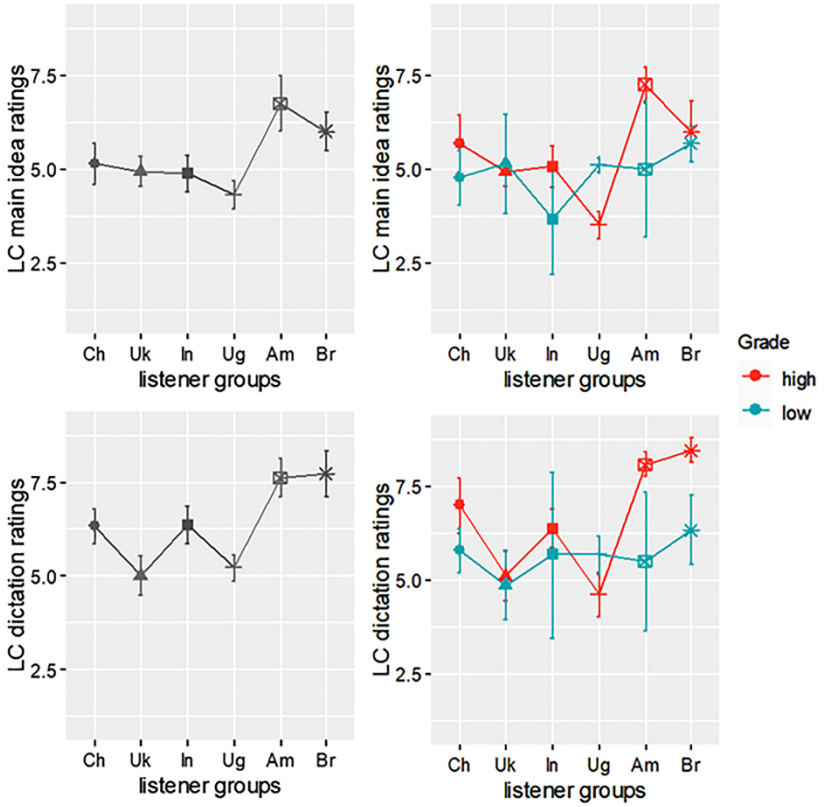

Figure 2: *Listener comprehensibility groups (left) and groups*English grades (right) plots using 20% trimmed means & standard errors: Note. Subject numbers are: Ch =23 (high = 10 & low = 13), Uk = 26 (high = 17 & low = 9), In = 27 (high = 24 & low = 3), Ug = 29 (high = 14 & low = 15), Am = 26 (high = 20 & low = 6), Br = 29(high = 19 & low = 10)*

Third, for AP ratings, both Figure 3 and Table 1 indicate that listeners to the Indian speaker perceived accentedness more than all other speakers' listeners, and the American and British speakers' listeners rated these speakers the lowest. While no English grade effect was found, there was group-grade interaction among the AP ratings both after the main idea (F = 31.57, p = .002) and dictation tests (F = 28.91, p = .007). This is evidently because the high-grade students in all groups reacted more sensitively to the speakers' accentedness than the low-grade students. There was no within-subject difference for the AP ratings, and no interaction with the group effect was found either, meaning that the AP ratings for the two tasks were consistent.

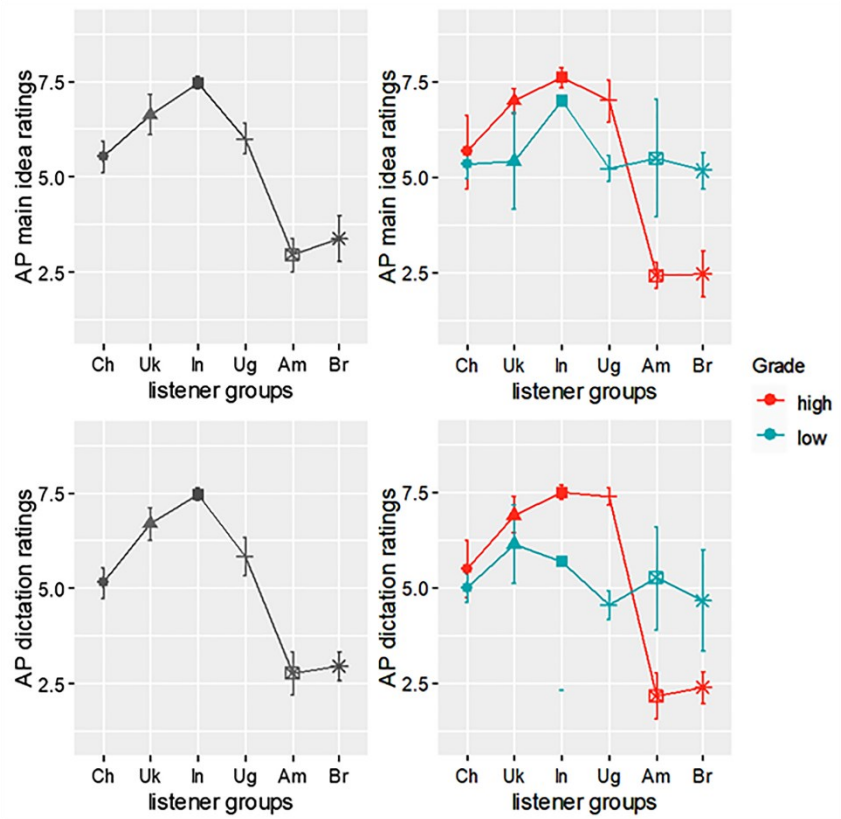

***Figure 3**: Accented perception groups (left) and groups*English grades (right) plots using 20% trimmed means and standard errors: Note. Subject numbers are: Ch =23 (high = 10 & low = 13), Uk = 26 (high = 17 & low = 9), In = 27 (high = 24 & low = 3), Ug = 29 (high = 14 & low = 15), Am = 26 (high = 20 & low = 6), Br = 29(high = 19 & low = 10)*

Finally, after both the main idea and dictation tests, the American and British speakers were significantly more accepted by their listener groups than the speakers of other groups (see Figure 4 and Table 1). The AA ratings for the two speakers were significantly more positive than the ratings for the Chinese, Ukrainian, and Indian speakers after both the main idea and dictation tests, and for the Ugandan speaker after the dictation test. No group-grade interaction was found; however, Figure 4 shows that the overall trend of rating American and British accents more positively than the other speakers' accents was clearer among the high-grade students. Again, neither a within-subject difference for the AA ratings for the tasks nor an interaction with the main group effect was found, indicating consistent ratings.

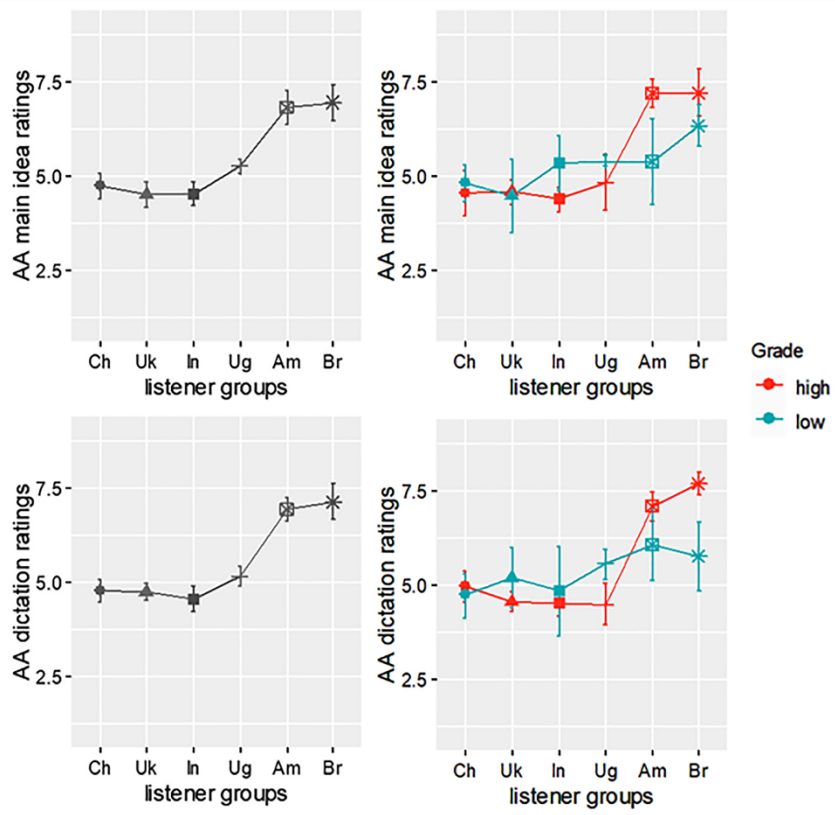

Figure 4*: Accentedness acceptance groups (left) and groups*English grades (right) plots using 20% trimmed means and standard errors: Note. Subject numbers are: Ch =23 (high = 10 & low = 13), Uk = 26 (high = 17 & low = 9), In = 27 (high = 24 & low = 3), Ug = 29 (high = 14 & low = 15), Am = 26 (high = 20 & low = 6), Br = 29(high = 19 & low = 10)*

***Table 1**: Outcomes of robust two-way ANOVAs for group difference in LI, LC, AP, and AA and pairwise post hoc tests (N = 160)*

		F-values	*p*-values	*Post hoc* ($p < .01$)
LI	main idea (MI)	16.7307	.043[a]	
	dictation (D)	144.1569	.001**	Am > In > Ch, Uk, Ug Br > Ch, Uk, Ug
LC	post MI	15.2313	.059	
	post D	19.3363	.003*	Am, Br > Ug
AP	post MI	112.8841	.001**	In> Ch, Ug> Am, Br Uk > Am, Br
	post D	23.8774	.016*	In > Ch > Br Uk, In, Ug > Am, Br
AA	post MI	25.1080	.006**	Am, Br > Ch, Uk, In
	post D	21.7733	.015*	Am, Br > Ch, Uk, In, Ug

Note. Ch = 23, Uk = 26, In = 27, Ug = 29, Am = 26, Br = 29.
*p <.05, **p <.01.
[a]The p-value appeared significant but no significant difference was found from the *post hoc* tests.
The WRS Package does not calculate effect sizes for factorial ANOVAs while ensuring the power of normal distribution by using 20% trimmed means (see Mair & Wilcox, 2019).
Ch, Chinese speaker; Uk, Ukrainian speaker; In, Indian speaker; Ug, Ugandan speaker; Am, American speaker; Br, British speaker.

4.2 Relationships among LI, LC, AP, and AA

To answer the second research question (see Section 3.1), the relationships among LI, LC, AP, and AA for the different groups were examined through partial non-parametric (Spearman) correlations tests (Conover, 1999), controlling for English grades, which sometimes interacted with the group effect (see Table 2). LI and LC had a moderate positive correlation only among the Ukrainian and Indian speakers' listeners for the main idea test, otherwise, no correlation between the two was observed. LI was also not correlated with either AP or AA in any group. Either a moderate or high negative relationship between LC and AP was found among the listeners of the Chinese, Ugandan, American, and British speakers for the main idea task, as well as a strong negative correlation among the American speaker's listeners. LC and AA were positively correlated among most groups except the Indian speaker's listener group, that is, listeners seemed to accept the accents with which they felt comfortable. Finally, there was a negative correlation between AP and AA among all the groups, indicating that when they perceived foreignness or non-nativeness in an accent, listeners were less likely to accept it, and vice versa.

***Table 2**: Significant non-parametric partial correlations among the four constructs when controlling for grades*

		LI x LC		LI x AP		LI x AA		LC x AP		LC x AA		AP x AA	
		Main idea	Dictation	Main idea	Dictation	Main idea	Dictation	Main idea	Dictation	Main idea	Dictation	Main idea	Dictation
Listener Group	Ch							- .433*		.472*	.577**		- .433*
	Uk	.557**								.687**		- .595**	
	In	.515**										- .598**	
	Ug							- .738**		.415*			- .437*
	Am							- .681**	- .900**	.494*	.604**	- .820**	- .741**
	Br							- .499**		.613**	.553**	- .717**	- .624**

Note. Information is organized into "group: coefficient (*p*-value)": Ch (*df* = 20); Uk (*df* = 23); In (*df* = 24); Ug (*df* = 26); Am (*df* = 23); Br (*df* = 26).
*p <.05, **p <.01.
Ch, Chinese speaker; Uk, Ukrainian speaker; In, Indian speaker; Ug, Ugandan speaker; Am, American speaker; Br, British speaker.

5 Discussion

5.1 Discussion of the results

We sought to address two research questions regarding Swedish youths as listeners to speakers of global Englishes. First, we investigated upper secondary school students' listening ability, perception, and attitude toward the diverse accents of six English speakers, focusing on comparisons of the listeners groups of different speakers. We operationalized the four constructs, *listener intelligibility* (LI), *listener comprehensibility* (LC), *accentedness perception* (AP) and *accentedness acceptance* (AA). In doing so, we also observed whether and how English grades interacted with LI, LC, AP, and AA. Second, we examined the relationships among LI, LC, AP, and AA of each of the six speakers' listener groups, controlling for grades. Key results are discussed below in view of previous studies.

In interpreting the LI of the six speakers' listener groups, we considered Kang et al. (2018), who found that GA and RP speakers were consistently better understood than all speakers with other English accents, whereas, among the speakers of other varieties, some were better understood than others. Even among speakers with the same accent, the listeners' intelligibility scores for some were significantly higher than for others. Our result that listeners of the American and British speakers performed significantly better than the listeners of the other speakers confirms the finding of Kang et al. (2018) regarding the intelligibility discrepancy between GA/RP speakers and speakers of other English varieties. This was, in fact, predicted, given the great influence of popular culture from English-speaking countries (particularly the US) on the Swedish youth (Cabau, 2009; Henry et al., 2019), as well as the general tendency to focus strongly on GA and RP accents during the teaching of listening in instructional settings (Alonso-Herrero & Lasagabaster Herrarte, 2019; Sung, 2016; Tsang, 2019), including the English education taught in Swedish schools (see Henry et al., 2018; Mohr et al., 2019).

Conversely, the significant differences in dictation scores among the listeners of the Chinese, Ukrainian, Indian, and Ugandan speakers may not be generalizable. That is, the differences may simply indicate LI for the individual speakers, rather than for their English varieties. The speaker participants do not sample the whole population of their own varieties although they clearly showcase the diversity of global English speakers, particularly in Swedish university contexts (also see the method section regarding what speaker groups the speaker participants can exemplify). Considering the findings of Kang et al. (2018), this result may have differed if we had included multiple other speakers from the same varieties.

Additionally, the finding that there was no significant difference among the six listener groups' main idea scores was somewhat unexpected. This outcome may signal that Swedish youths possess listening comprehension to understand diverse English accents when hearing every detail is not necessary. Alternatively, it could reflect a training effect of the Swedish youths being familiar with the format of the national English test although the questions themselves were novel to them. Therefore, the outcome attached to the main idea LI should be further scrutinized to establish a plausible conclusion, for which a more rigorous test method should be identified through piloting different test designs.

As for LC, the trimmed means of the LC ratings were in favor of the American and British speakers; however, a statistical difference was found only between the listeners of the American and British speakers on one side and the Ugandan speaker on the other. The high

negative correlations between LC and AP (Table 2) among the American speaker's listeners for both the main idea and dictation tasks were not found among any other speakers' listeners, including those of the British speaker. One possible explanation for this can be the fact that the input Swedish youths receive is skewed toward American English (Cabau, 2009) since the level of accent familiarity is known to play an important role in comprehensibility (Gass & Varonis, 1984; Isaacs & Trofimovich, 2012). In contrast, aligned with the findings of Kim (2008), Matsuura (2007), and Matsuura et al. (1999), all of which investigated learners' LI and LC, the Swedish students' LC was usually not correlated, or had only a weak correlation with LI. This finding raises the question that other factors besides familiarity may also have affected LC. Possibly, together with familiarity, "their notions or conceptions of the value of the speaker's accent" may have affected their LC ratings (Ballard & Winke, 2017, p. 214; Lindemann, 2017).

Our results on AP and AA largely confirmed the findings of previous studies. First, when examining the trimmed means, the AP ratings were most consistent for both main idea and dictation tasks among the four constructs, such that the AP for the American and British speakers was significantly lower than the AP for the other speakers. While this tendency did not clearly emerge among the low-grade students, it was apparent among higher-level students. As also observed by Goh (1999) and Harding (2008), high-proficiency listeners seemed to be much more sensitive to native and non-native accents than low-proficiency students. In addition, the AP of the Indian speaker's listeners was higher than the other groups among the six groups. Kennedy et al. (2017) and McKenzie et al. (2019) noted that, for various reasons, some accents can be more salient than others, and salience is one of the factors that impacts perceived accentedness. Although we do not know whether Swedish students in our study identified the speakers' accents correctly, our finding is comparable with McKenzie et al. (2019), in which Thai L1 university students tended to identify American, British, and Indian accents more correctly than other varieties due to their salience. Presumably, the saliences of the American and British speakers and the Indian speaker could be speculated differently. American and British accents may have been salient to Swedish students due to their familiarity while, when referring to Trudgill (1986), that of the Indian speaker may be related to the distance between the phonetic/phonological features of the students' L1, Swedish and the Indian speaker's L1 Tamil.

Further, although the AP for the Indian speaker was higher than the AP for the Chinese, Ukrainian, and Ugandan speakers, there was no statistical difference in the AA of their listeners. There was a 50% chance of a moderate negative correlation between the AP and AA ratings for these four speakers, whereas there was always a strong negative correlation between the AP and AA ratings for the American and British speakers. This tendency was more clearly observed among high-grade students, and, for all six speakers, neither AP nor AA was correlated with LI. These findings indicate that the accent preference of Swedish youths is skewed toward that of American English (Cabau, 2009; Norrby, 2015), and whether they could understand a speaker did not seem to have much relevance. That is, not only that the Swedish youth listeners had poorer understanding of non-American/British speakers, but they also seemed to involve certain preconceived values in perceiving and evaluating different speakers' accents, which probably needs to be addressed separately from their listening ability.

5.2 Implications for English language education

Overall, our results suggest the need for pedagogical intervention involving curriculum innovation for English language teaching at school (Matsuda, 2018; Rose et al., 2020). First, students need to be guided to improve their actual understanding and sense of familiarity with global English speakers besides the native accents that they prefer. Without a doubt, understanding a speaker requires different abilities, not least decoding phonetic/phonological signals, comprehending the meaning of the decoded utterances, and interpreting pragmatic meaning behind uttered meaning (Rost, 2011), where meaning-negotiating strategies also play a role. Therefore, endeavors to help learners become effective international communicators should involve fostering all levels of linguistic abilities as well as pragmatic strategies as suggested by Lee and Drajati (2020); Sifakis et al. (2020). However, based on our results, and given that much of communication breakdown in the context of English as a contact language is caused at the level of phonological decoding (see Deterding, 2013; Kim & Billington, 2016 for example), we wish to highlight the importance of training learners to understand different accents, which the concept of LI encapsulates.

In addition, apart from training LI and LC, innovative pedagogical work should be undertaken to change Swedish youths' perceptions and attitudes and prepare them to become open-minded toward diverse English speakers. As our results indicate, an increased understanding of certain English speaker groups may not automatically stimulate positive attitudes toward them. However, research reports interaction between the listener's comprehension of and attitude/belief about a certain accent in both positive and negative ways (Lindemann & Subtirelu, 2013), and if attitudes are mediated by some other pedagogical interventions, such as activities for raising awareness, and developing knowledge of the globalized English reality (Rose & Galloway, 2019), having a good understanding of an accent can possibly strengthen positive attitudes, and vice versa.

Moreover, we suggest that the English national test should be more aligned to the global perspective of the national English syllabus, realizing that the focus on native norms in testing has been the major hinderance to innovative teaching practice (Rose & Galloway, 2019); that is, in the listening section of the test, a greater variety of accents should be included to "achieve greater authenticity" of globalized situations and to "create positive washback" (Harding, 2008, p. 3)

As discussed earlier, the Swedish national English syllabus promotes a global perspective, stating, "[k]nowledge of English increases the individual's opportunities to participate in different social and cultural contexts, as well as in global studies and working life" (Swedish National Agency for Education, 2011, p. 1). This is an appropriate measure and response to the fact that the Swedish use English as an international communication tool. Such a need is increasing even within the country, where the implementation of the Bologna Process has brought a great number of international teachers and students to the country. In fact, the six speakers who participated in our study represent the type of international interlocutors that Swedish youths will encounter within the country. We suggest that school teachers consider a wider interpretation of the recommendation of the syllabus that "[t]eaching should make sure of the surrounding world as a resource for contacts, information and learning" (Swedish National Agency for Education, 2011, p. 1) and apply the idea to curriculum innovation (Rose et al., 2020).

5.3 Limitations

In our study, we attempted to ensure the meaningfulness and generalizability of the statistical results by employing several methodological strategies, including random group assignment of listeners, who were tested class by class, and robust inferential tests. Nevertheless, we are aware of the limitations of our results that we consider below. First, the speakers, although selected from different varieties to include global Englishes speakers with diverse accents, were not considered to represent their own varieties. Thus, for example, the Swedish learners' listening performances and attitudes toward speakers' accents cannot be overinterpreted as toward the speakers' own varieties. In addition, the one-time measurement of LC and AP after the main idea and dictation tests represents a limitation of this research, which we have considered while discussing our results in Section 5.1.

A potential issue that may be raised is whether the speech materials comprising text reading are too artificial to produce valid listening performances and perception/attitude ratings. Text-reading in general may be considered less natural than conversational talks. However, language use in the digital age largely involves listening to pre-recorded and/or scripted speeches (i.e., text-reading), through engaging in media (e.g., YouTube), taking *Massive Open Online Courses*, and the like. Besides considering this nature of digital-age language use, our materials were not necessarily less authentic or more artificial than speech materials of most listening comprehension tests. Moreover, our way of creating speech material has been adopted by substantial research with scientific rigor, as it allows valid measurement of intelligibility (actual understanding affected by a speaker's pronunciation), controlling "noise" factors possibly influential to listeners' understanding, such as individual speakers' syntactic or lexical preferences or diversity of idiomatic expressions among speakers from different speech communities. Therefore, we argue for the appropriateness of our method design and validity of our results.

6 Conclusion

This study investigated Swedish upper secondary students' LI, LC, AP, and AA of global Englishes speakers with diverse accents. The results suggest that Swedish youths share the known tendencies of L2 learners and users of English: they understand better (e.g., Kang et al., 2018) and favor privileged accents (particularly GA and RP) over other English accents (e.g., Sung, 2016; Tsang, 2019). Our study, therefore, highlights the need to help Swedish youths and other English learners widen their view of English as a global contact language and its speakers, maximize their listening proficiency, and, thus, be ready for globalized English use (Morrison & White, 2005; Rose et al., 2020). Moreover, we believe that our study is of methodological significance in its extension of the use of the concepts of intelligibility, comprehensibility, and accentedness for assessing L2 speakers' pronunciations and determining L2 listeners' abilities with and perceptions of diverse accents, thereby suggesting pedagogical intervention for learners as listeners rather than speakers.

In future research, detailed examinations of phonological features that affect Swedish youths' LI should be conducted to identify areas to be included in the curriculum for teaching listening proficiency with diverse accents. We also recommend classroom practice studies that document the process through which school education helps improve learners' LI, LC, AP, and AA for Global Englishes users (also see Rose et al., 2020 for discussions related to this recommendation). Such studies can also examine whether positive contacts with and exposure to different English speaker groups help students to be unbiased (Subtirelu & Lindemann, 2016) and even mediate their attitudes to have more positive, straightforward correlations with actual understanding. Further, to attest the current results, we suggest more

studies that operationalize the constructs of LI, LC, AP, and AA, with larger speaker samples and listener subjects as well as employing various research techniques for triangulation, such as eliciting attitudes through a mixed method approach (e.g., Cameron & Galloway, 2019) or observing interaction between the listener's four constructs and the speaker's accommodation skills in an interactional context.

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**We provided the full citation according to APA 7th, and understand that Frontiers referencing style will be applied during typesetting*.

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Preprint **DOI:**
10.6084/m9.figshare.13553720