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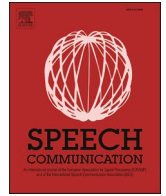
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ABSTRACT

The present study investigates the relative contribution of the Nativeness vs. Intelligibility approach in prosody instruction for developing English speaking skills by Iranian interpreter trainees. Three groups of student interpreters were formed. Participants were assigned to groups at random. The speaking skill pretest scores revealed that the three groups were homogeneous before starting the training program. The Control group listened to authentic audio tracks in English, and discussed their contents, watched authentic English movies, and did exercises to improve speaking skills without receiving prosody training. The Nativeness approach group instead spent part of the time on the theoretical explanation of, and practical exercises in, English prosody with the overall aim to train students to acquire native-like speaking skills. The Intelligibility approach group spent part of the time on the theoretical explanation of, and practical exercises in, English prosody emphasizing the requirement that students produce intelligible speech. The total instruction time was the same for all three groups, i.e., 18 h. Students then took a posttest in speaking skills. The results show that both experimental groups performed better than the control group. Moreover, the Intelligibility approach group outperformed the Nativeness approach group in developing speaking skills.

1. Introduction

An interpreter mediates between interactants who do not understand each other's language (e.g., Pöchhacker, 2004). Interactant A speaks in language A to the interpreter, who then produces a faithful rendition of the meaning of A in language B, which can be understood by interactant B. Then, interactant B may answer in language B, which is interpreted into language A. The interpreter may speak while he listens to the input speech (so-called simultaneous interpreting) or may wait until the speaker has finished his turn before producing a rendition of it in the other language (so-called consecutive interpreting). The interpreter is a bilingual speaker of both languages A and B. In most cases, however, one of these languages will be the interpreter's mother tongue, while the other language was learned later in life – so that the interpreter's command of this language is to some extent defective. When the interpreter translates input speech into his native language, the process is called direct (or *recto*) interpreting. Interpreting into the non-native

language is called reverse (or *verso*) interpreting. The weakest link in the interpreting process is the interpreter's command of the non-native language (L2). An excellent command of the L2 is needed both to ensure high-quality output in the L2 (in terms of vocabulary, morphosyntax and pronunciation, including the appropriate use of prosody. The same skills are called upon when the interpreter has to decode L2 input speech. The interpreter must speak the non-native language well enough to be effortlessly understood, and at the same time the interpreter should be able to use all the language-specific acoustic cues exploited in the non-native input speech to recognize words and grasp the meaning and intentions of the speaker.

The key to building interpreting expertise lies in improving the efficiency of the interpreter's perception and production skills in the L2 (e. g., Hu, 2010; Qianxi and Liang, 2019). Prosodic feature awareness training can be helpful for interpreters both in speech production and speech recognition (Yenkimaleki and Van Heuven, 2018, 2019c). Segmentation of continuous speech into syllables, words and phrases,

signaling syntactic structure, and emphasizing important content words and other salient information are some of the functions of prosody that facilitate the processing of speech (Whalley and Hansen, 2006). Huber (2005) argued that proficient interpreters systematically take advantage of prosodic properties of the L2 to access complementary and compensatory information in message perception and to resolve ambiguities of utterances.

For successful decoding of input speech and encoding speech output in the non-native language interpreter trainees may benefit from an explicit comparison of the prosodic properties of their native language and those of the L2 (Yenkimaleki, 2019). Moreover, the importance of prosody for an interpreter in bilingual communication between two parties A and B would be the same as in monolingual communication (Ahrens, 2004). Since the prosodic features in the source language contribute to the message, they should be adequately expressed in the target language as well. However, prosodic feature awareness training is not a priority in interpreting programs or in materials for instruction (Chela-Flores, 2003).

Speaking skills are among the most important skills in communicating the message in the execution of the process of interpreting (Zaremba, 2014). According to Levelt (1989) one of the most important aspects of speaking is the articulation of words and sentences, a process which would be called 'pronunciation'. Adams-Goertel (2013) states that through prosodic feature awareness training EFL learners can improve their pronunciation skills to speak in a more native-like fashion. Adams-Goertel also argues that it is necessary to incorporate prosody teaching with meaningful communication tasks so that EFL learners' pronunciation skills develop.

Researchers of second language (L2) acquisition (e.g., Schmidt, 2001; Yenkimaleki and Van Heuven, 2018) suggest that for effective training, learners need to become metacognitively aware of the formal rules of the nonnative language features. DeKeyser (2003) pointed out the crucial role of the explicit instruction of the rules (through deduction), and of making learners focus on particular linguistic forms to find the rules themselves (through induction). Some scholars emphasize the training benefits of explicit teaching of pronunciation rules (e.g., Derwing and Munro, 2005; Yenkimaleki and Van Heuven, 2016c, 2017, 2018; Yenkimaleki, 2019; Yenkimaleki and Van Heuven, 2020) to make learners notice the differences between their own productions and those of the native speakers of the L2. In this vein, Field (2005), and Venkatagiri and Levis (2007) also believe that conscious awareness of suprasegmentals enhances the speech intelligibility of the foreign language learners for native English listeners.

Instruction of pronunciation rules has been emphasized recently by some researchers (e.g., Yenkimaleki and Van Heuven, 2019a, b, 2020). Scholars need to analyze the facilitative role of explicit teaching of pronunciation rules in L2 learners' outputs systematically. Recent studies do not explicitly clarify the linguistic features which were targeted in the treatment (e.g., Neri et al., 2008 focused on 28 words). Therefore, the effectiveness of explicit instruction in enhancing the targeted linguistic features was not uncovered comprehensively by researchers so far. The most important reason is that researchers investigate the methodologies used in the explicit teaching of pronunciation rules. The other reason is that the researchers did not have access to participants who had similar features (e.g., same age, same first language background). If the participants in previous studies were homogeneous, the treatment could be targeted to the participants' specific pronunciation problems (Derwing and Munro, 2005).

The Nativeness and Intelligibility approaches were proposed for pronunciation teaching in the EFL context. In the Nativeness approach, the final goal is to train the students to acquire native-like pronunciation, while in the Intelligibility approach the practitioners just aim at L2 speech that is decodable for the listener. The Nativeness approach was criticized as wishful thinking since a native pronunciation is outside the reach of the nonnative learner. Derwing and Munro (2009) stated that empirical evidence for the effectiveness of the intelligibility approach

makes instructors set up priorities for the application of intelligibility approach in academic settings.

Currently, the biggest challenge in interpreter training programs is to make training programs convenient, practical, useful, and attractive to a broader cohort of students, to let them develop professional speaking skills (Yenkimaleki and Van Heuven, 2018, 2019c). The Nativeness approach and Intelligibility approach can provide practical methodology in developing speaking skills for interpreter trainees. Therefore, the present study addresses the effect of prosody instruction in developing speaking skills for interpreter trainees via two different approaches aiming at either nativeness *or* intelligibility.

1.2.1. Nativeness vs. intelligibility

For some years, researchers of teaching English as a Foreign Language (EFL) paid attention to the perception and production of English sounds (e.g., segmentals and suprasegmentals) or to the role of the learners' first language in learning the sounds of English (e.g., Munro and Derwing, 2011; Yenkimaleki and Van Heuven, 2018, 2019a). The evidence shows that pronunciation teaching was the neglected area for research and instruction in the EFL context until recently and it was looked upon as the seasoning in the English language classes in the EFL context (Levis, 2018). The reason behind this type of decision was the communicative language teaching approach that marginalized the status of pronunciation teaching, and some instructors were not proficient in the explicit teaching of prosodic features, and rating it (e.g., Levis, 2006; Yenkimaleki and Van Heuven, 2018, 2019 a, b). Therefore, instructors in different EFL contexts followed their own intuitions (e.g., Derwing and Munro, 2005) and did not follow a systematic approach in prosody teaching (Yenkimaleki and Van Heuven, 2018; 2019a).

The Nativeness approach has been based on the assumption that there are ideal and deficient ways to pronounce a language, and that deficient pronunciation should not be tolerated. In the Nativeness approach all aspects of pronunciation are, *de facto*, equally important, and that, no matter where a learner starts, there is only one allowable destination: sound like a native speaker. Any unmastered pronunciation feature demonstrates that the learner has failed. In contrast, the Intelligibility Principle asserts that communicative success, rather than nativeness, is the goal, and that not all pronunciation features are equally important for being understood (Levis, 2020). Furthermore, in the Nativeness approach only instructors who are native or native-like can be trusted to teach pronunciation (Levis, 2020). A focus on nativeness leaves many well-qualified nonnative teachers uncertain of whether they should teach pronunciation or trust their own skills. Believing that nativeness is a realistic standard for L2 learning can also foster discriminatory practices because nonnative instructors may be considered deficient native speakers (Mahboob and Golden, 2013; Medgyes, 1992).

Intelligibility enhancement is an intervention aiming to improve the intelligibility of the English speech of EFL learners (Blake and McLeod, 2019). There are various types of intervention programs for enhancing intelligibility, e.g., targeting accent improvement, accent modification, and accent reduction (Fritz and Sikorski, 2013). Some types of intervention programs have been designed for improving the intelligibility of EFL learners by using technological resources (e.g., Accent Master software (Mehrpour et al., 2016)), or by taking advantage of elocution and voice coaching programs. Blake and McLeod (2019) emphasized that intelligibility enhancement sticks to the principle of intelligible speech rather than native-like pronunciation. Derwing and Munro (2015) pointed out that the aim of the intervention programs is to make EFL learners enhance their speech intelligibility for effective communication. The purpose is not to train the EFL learners to acquire native-like pronunciation (Levis, 2005). Therefore, the intervention programs are designed to make EFL learners metacognitively aware of the differences in prosodic features between their L1 and English, and also provide intensive practical tasks with constructive feedback which

may boost the intelligibility of EFL learners (e.g., Yenkimaleki and Van Heuven, 2017, 2018, 2019a; Blake and McLeod, 2019).

Research on late learners has zoomed in on a range of phonological and morphosyntactic measures showing that L2 learners could attain indistinguishable native-like language proficiency (Piller, 2002). There have been post-pubertal L2 learners who became native speakers (Davis, 2006). However, Flege (2003) stated that it is difficult for EFL learners to attain native-like pronunciation. Derwing and Munro (2005) looked at L2 speech from two different perspectives (viz., comprehensibility, and accentedness). They define accentedness as the degree to which the pronunciation of an utterance differs from the expected native pronunciation, and comprehensibility as the listeners' estimation of difficulty in understanding an utterance.

However, Levis (2016) holds that the importance of intelligibility in the EFL context is increasing, while the importance of accent seems to be decreasing. Levis emphasizes that these two notions are independent constructs that should remain complementary in research while in teaching they are competing constructs for the instructors.

Miller (2013) argued that intelligible speech is a key element of spoken language proficiency; it is a prerequisite for effective verbal communication. Proficiency in speaking skills influences multilingual speakers' ability to participate in employment and community activities in English-dominant countries (e.g., Blake et al., 2017, Blake et al., 2018). Moreover, intelligible speech is also essential in ensuring successful communication in a multilingual context when interactants use a language other than their native language (e.g., a Persian PhD candidate in an English-spoken conference).

In the intelligibility approach, learners simply need to be understandable (Levis, 2005). The intelligibility principle recognizes that communication can be remarkably successful even when foreign accents are noticeable, that there is no clear correlation between accent and understanding, but that certain types of pronunciation errors may disproportionately impair comprehensibility . Pronunciation instruction should, therefore, focus on those features that are most helpful for understanding and should ignore those that contribute little. For instance, the instruction should focus on suprasegmentals (e.g., Yenkimaleki and Van Heuven, 2016b, 2017, 2018, 2019a) because improving the (Persian) EFL learner's prosody sooner leads to better intelligibility than spending the same instruction time on improving segmentals.

1.2.2. Prosody training

Prosody plays an essential role in speech processing since it guides the division of the continuous stream of speech into smaller units that can be processed separately (e.g., Cutler, 2012). Prosody helps the listener find sentence boundaries, phrase boundaries, and sometimes even word boundaries. These boundaries are necessary for listeners to reduce the number of competing representations of the incoming structures they have to entertain in working memory . The appropriate use of prosodic features such as stress and intonation has been claimed to be more crucial for intelligibility than the accurate production of individual segments. Even though there is a need for the teaching and practicing of sounds (Yenkimaleki and Van Heuven, 2016c, 2019b), numerous studies suggest that more emphasis should be put on prosody (e.g., Derwing et al., 1998; Yenkimaleki and Van Heuven, 2016c, 2018, 2019b).

Derwing et al. (1998) investigated the relative effects of segmentals vs. suprasegmentals on speech comprehensibility of L2 speakers of English. They concluded that suprasegmental teaching results in better speech comprehensibility for learners. In spite of the crucial importance of prosody, most pronunciation models are biased towards the description of how segmentals are learned (e.g., Yenkimaleki and Van Heuven, 2016a, b, 2018; Kuronen and Tergujeff, 2018). Derwing and Rossiter (2003) stated that explicit teaching of segmentals, even though it improves the learners' accuracy over time, does not improve the students' overall speech comprehensibility. Saito and Saito (2016)

investigated the effects of prosody instruction on comprehensibility, word stress, rhythm, and intonation development by Japanese learners of English. The experimental group received a total of three hours of suprasegmental instruction over six weeks, while the control group was provided with meaning-oriented (e.g., the focus of the instruction was semantic) instruction without any focus on prosody. Speech samples elicited from reading-aloud tasks were assessed through native listener judgments and acoustic analyses. The data showed significant gains in the overall comprehensibility, as well as correct word stress, rhythm, and intonation of the experimental group. In particular, by virtue of explicitly addressing the differences between the L1 and L2, the instruction helped learners mark stressed syllables with longer and clearer vowels, reduce vowels in unstressed syllables, and use appropriate intonation patterns for *yes/no* and *wh*-questions.

Herry-Benit (2012) argued that French EFL learners should be familiarized with English prosody from the very beginning of L2 learning. Others go even further and advocate that EFL teaching should always give priority to prosody-oriented instruction over segmental instruction regardless of the learner's L1 (e.g., Frodden and McNulty, 1996; Nakashima, 2006). McNerney and Mendelsohn (1992) concluded that prioritizing prosody in EFL teaching does not only enable learners to be more comprehensible, but it is also less frustrating for the students since their intelligibility improves quickly and noticeably. Ueno (1998) showed that prosody-oriented instruction led to a significant improvement of prosodic aspects in the receptive skills of Japanese EFL learners but not of productive skills or segmental aspects; it also yielded an increase in listening comprehension by the poorer half of the students. Segmental training yielded no improvement in any specific aspect tested but still yielded an improvement of overall listening comprehension by the poorer half of the students. Akita (2005) showed that a prosody group significantly improved its pronunciation on all six rating scales used, including one scale that tested segmental properties, i.e., the realization of English vowel and consonant contrasts that do not exist in Japanese. Surprisingly, Akita's segmental group did not improve at all, not even on the segmental rating scale. This paradoxical result can be understood if we consider that the prosodic features tested were mainly sandhi phenomena, i.e., assimilation, cluster simplification, and resyllabification, which are basically segmental in nature (if the word boundary itself is treated as a segment). Even the only truly prosodic feature, rhythm, was operationalized as presence/absence of vowel reduction in unstressed syllables, which again is a segmental matter since it is tested on a single segment.

1.3. Current study

We suggested that the prosody training program is the crucial element for the interpreter training programs in enhancing the speaking skills of interpreter trainees for encoding the messages in their interpretating performance (Yenkimaleki and Van Heuven, 2016a, 2017, 2018, 2019a, b, c). In the present experiment, we broaden our horizon to determine which instructional approach works better in enhancing the speaking skills for interpreter trainees. Concretely we asked the following research question:

Which approach to prosody instruction yields better speaking skills by interpreter trainees: the Nativeness or the Intelligibility approach?

Our hypothesis is that the Intelligibility approach should lead to a measureable improvement in speaking skills by the Persian students, especially when it comes to their pronunciation skills.

2. Method

2.1. Participants

Forty-five students of interpreting between Persian and English were chosen randomly from 90 freshman students (i.e., the first year of the BA curriculum) at the University of Applied Sciences, Tehran, Iran. They

were randomly divided into three groups of fifteen students (eight male and seven female students per group). The participants were native Persian speakers within an age range of 22–25 years. They participated in all sessions of the training program.

The students were admitted to the BA study in interpretation only if they had a high school diploma and had passed the national entrance exam relevant to the university discipline of their choice. The national entrance exam specifically measures the applicants' knowledge of English (or other languages, e.g. German or French). Students at the BA level take both translation and interpretation courses. Graduates (after four years or 155 credits) may pursue a professional career as interpreters. The language combination in a training program is always restricted to two working languages, where language A is the mother tongue (Persian) and language B a non-native language (here English).

2.2. Ethics

We received approval from the ethics committee of the Dept. of Modern Languages for the present study. All the participants agreed to take part in the research project based on informed consent and received a small amount of money for their services.

2.3. Procedure

Three groups of 15 students were formed. The first was a control group, which did not receive prosody instruction but instead did different types of exercises to develop their English speaking skills (see Section 2.3.1).

The two experimental groups spent 20 min. less time per session on the routine curriculum and instead received 20 min. instruction of prosodic properties of English. The materials for the treatment were American English speech fragments. The types of training were based on the authors' previous studies (e.g., Yenkimaleki, 2017; Yenkimaleki and Van Van Heuven, 2018, 2020). The specific type of the contents for each session was not told to the students before. The reason was that the instructor did not want students prepare any materials outside of the classroom. The first author was the instructor for all three groups. He has done his PhD in this area; he is specialized in pronunciation training for EFL learners, and has some ten years' experience in teaching and research in this area. The general organization of the teaching program is shown in Table 1, separately for the control group and the two experimental groups.

2.3.1. Control group

The Control group received routine exercises, asking them to listen to authentic movies/audio tracks in American English and to discuss issues

Table 1

Summary of activities and time spent (minutes) by three groups of participants in the experiment.

Activity	Group/treatment		
	Control	Intelligibility approach	Nativeness approach
Listening to instructor explanations/guidance/comments	270	270	270
Prosodic theory and practice by the human instructor		360	360
Audio tracks/ movies	810	450	450
Total time spent	1080	1080	1080

Table 2

Overview of activities in the training program for three groups.

Group/treatment		
Nativeness approach	Intelligibility approach	Control
1. Students recorded themselves during speaking tasks and later analyzed their recordings (e.g., to identify the parts with poor pronunciation).	Students received procedural knowledge about prosodic features of English to have intuitive knowledge (e.g., theoretical information on English prosody and how it differs from Persian).	Students listened to authentic movies/audio tracks in American English, and discussed issues brought up in the movies/audio tracks.
2. Students listened to audio tapes and shadowed. The main purpose behind shadowing practice is to make the students speak like native speakers.	Students were asked to repeat key words (e.g., such as *prayed/parade; foreign/for rain*).	Instructor used warm-up questions, and brainstormed relevant vocabulary for listening tasks. Then students discussed the contents of movies/ audiotapes.
3. Students targeted problematic stress patterns (including minimal stress pairs such as *PREsent/preSENT; OBject/obJECT*). They drilled the words until the instructor was confident that they could reproduce them successfully.	Students contextualized the tasks (e.g., repetition of keywords in a listening passage).	Instructor played the movie clip/audio file first for general comprehension – to allow students to get the main idea. Then, replayed it several times for the students to grasp more details.
4. Students transcribed and drilled new vocabulary. Instructor focused on other prosodic aspects of pronunciation, e.g., sentence stress and intonation.	Students engaged in meaningful, authentic tasks (e.g., choice of the correct word in a sentence or a sentence in a paragraph).	Students were asked questions to talk about based on the issues they perceived in the movies/audio files.
5. Students drilled whole phrases and sentences. They were admonished in all sessions that it is practically possible to acquire native-like pronunciation and speaking skills. Iranians with such skills were invited on-line to make students believe that this goal is attainable.	Students were asked to perform realistic tasks (e.g., a role-play of a situation similar to one that one may face in real life).	Students watched a short movie in American English. Then they were divided into three groups in the classroom, and discussed important concepts of the movie with each other in English, and later presented them to the other groups.

brought up in the movies/audio tracks for a total of 1080 min. Students practiced intensive speaking skills, which tasks were followed by discussing the contents in the different sessions. The movies which the students watched, were not captioned.[1] To help prepare students' expectations about what they are going to listen/watch and to aid in their comprehension, the instructor used warm-up questions, and brainstormed relevant vocabulary. The instructor introduced the topic, and got the students thinking about it. If felt necessary, the instructor presented a short list of keywords occurring in the movie/audio file that students might be unfamiliar with. The meaning of such keywords was illustrated by using them in disambiguating sentences before the audio file was started. The instructor played the movie clip/audio file first for general comprehension – to allow students to get the main idea. Then, he replayed it several times for the students to grasp more details. The pause button was used when needed to focus on sections students had

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[1] Captioning (or subtitling) refers to the process by which the audio contents of a video, such as speech and other sounds, are converted to text and displayed on screen (Hayati and Mohmedi, 2011).

difficulty in understanding. Next, students were asked some questions to talk about based on the issues they perceived in the movies/audio files. Some students were asked to present a short speech on the subjects they watched/listened. Also, students were divided into three groups in the classroom and were asked to discuss the important concepts with each other in English and later to present them to the other groups. Interesting, and in some cases, humoristic movies/audio files were chosen, covering a variety of topics such as politics, social issues, and scientific findings. Only good-quality audio files with clear-voiced speakers were presented. The same procedure was followed in each of the 18 lessons.

2.3.2. Nativeness-approach group

The Nativeness-approach group spent less time on these tasks and in the freed-up time, they received awareness training of English prosody in the form of theoretical explanation by the instructor and practical exercises (audio tracks which exemplified how prosody affects meaning in English) in suprasegmentals (word stress, rhythm, intonation) for 20 min. during each training session. In the Nativeness approach, the instructors followed four steps. The participants took part in the program for 18 sessions (sixty minutes per session) during nine weeks, i.e., 18 h. in all.).

For the Nativeness-approach group, at the first step, the instructor asked the students to record their speech since making a recording can be a good way of getting a clear picture of someone's current manner of speaking and understanding in what ways their intelligibility might be improved. A variety of strategies was employed to encourage students to speak. The instructor asked them to answer an open question, talk for a minute on a topic (e.g., the future of planet earth, their weekend activities) to motivate and engage students. The students were then asked to listen to the recordings and helped to analyze their speech (e.g., identifying the parts with poor intelligibility or pronunciation, how fast they had spoken, the amount of hesitation, repetition). In the second step, the instructor asked the students to listen and shadow. Shadowing is a useful online listen-and-repeat activity (see below) that students can practice almost anywhere (e.g., Murphey, 2001; Zakeri, 2014). Shadowing is an effective means of teaching pronunciation (e.g., Nye and Fowler, 2003; Rongna and Ryoko, 2012). The main purpose behind shadowing practice is to make the student' speech be like native speakers (Zakeri, 2014). Some authentic audio files were selected for the students. The audio files were under five minutes in length and were based on the speech of a single proficient English speaker (e.g., recorded from zappenglish.com). An effort was made that the students chose a topic they were already familiar with and which was of interest to them. The students listened to the audio files once, and they paid attention to the speaker's rhythm, accent, and pace of speaking. The students were asked to shadow, which was to say the same words as the speaker at about the same time (or as fast as possible), for about 30 s. at a time. Students then paused, tried again, and even recorded and listened back to their own versions (e.g., like when somebody sang the words of a song that they already knew well, trying to match the speaker's pronunciation and pace as best they could). This helped the students focus on how English speakers modulate speed, use intonation, and blend words together. By repeating back what they heard, students could begin to improve their own intonation, connected speech, and overall fluency. In the third stage, students targeted problematic sounds. Throughout the lesson, the instructor listened to how students spoke, identified a number of words that reflected the pronunciation challenges for the students. The instructor wrote the words on the board and grouped the words (e.g., *PREsent/preSENT; OBject/obJECT*). Next, the instructor asked the students to identify the vowel sound in each word and write their phonemic symbols on the board. The students drilled the sounds and then the words until the instructor was confident that the students could reproduce them successfully. In the fourth stage, the instructor asked the students to transcribe and drill new vocabulary. While problems with individual sounds may occasionally impede understanding, the instructor also focused on other aspects of pronunciation such as word

stress, sentence stress, and intonation. New vocabulary items that came up during the training program were written down. At the end of each session, the instructor took five minutes to review it with the students. To make drilling more interesting, the instructor added an element of drama. The instructor asked the students to say the words while expressing different emotions (e.g., angry/happy/sad/excited). In the last stage, the students drilled whole phrases and sentences. Students were admonished in all sessions that it is practically possible to acquire native-like pronunciation and speaking skills. Some Iranians, who had grown up in Iran, now lived in the United States and had acquired native-like proficiency, were asked to skype with the students so that students could observe in practice that native-like proficiency is an attainable goal.

2.3.3. Intelligibility-approach group

The intelligibility-approach group received explicit teaching of prosodic features of English speech for 20 min during each training session. At the first stage, students received procedural knowledge about prosodic features of English to have intuitive knowledge (e.g., theoretical information of English prosody and its difference with Persian), which cannot be verbalized (e.g., Piske, 2008; Yenkimaleki and Van Heuven, 2018) (e.g., phonetic/phonological sensitivity). In the second stage, students were asked to repeat words (e.g., such as *prayed/parade; foreign/for rain*). In the third stage, the instructor asked the students to contextualize their tasks (e.g., repetition of keywords in a listening passage). In the fourth stage, having done the required practical tasks on contextualization, the students engaged in meaningful, authentic tasks (e.g., choice of the correct word in a sentence/ a sentence in a paragraph). In the last stage, students were asked to do realistic tasks (e.g., a role-play of a situation similar to one that one may face in real life or a discussion of the students' real-life situation or concerns).

2.4. Data collection

Both pretest and posttest consisted of interviews that were run systematically by three lecturers at the interpreting and translation department of the University of Applied Sciences in order to evaluate the participants' speaking skills. The pretest and posttest consisted of five questions. The questions were descriptive in nature so that world knowledge of the students was not involved in answering the questions, e.g., *describe the university campus*. The same prerecorded questions were asked to all the participants (students were in different rooms, and they could not see each other after answering the questions). The questions in the pretest and posttest were different so that students would not remember any point from the pretest (to control the testing effect). For the purpose of measuring learners' improvement in speaking skills, the current study adopted a human rating method in the same manner as in similar previous studies (e.g., Derwing et al., 1998; Yenkimaleki, 2019). Three raters evaluated the speaking skills of the participants. They were native speakers of Persian and worked as assistant professors of Applied Linguistics. Two of the raters studied at the University of Essex in the UK, and one of them had studied at Leiden University, the Netherlands. The participants did not know in which training group they were nor did the raters know in which group the speaker was when they rated them. Raters, by consulting with each other, wrote ten questions for the pretest and posttest of the study before the program started. Five questions (out of ten questions) were randomly chosen for the pretest, and five questions for the posttest. The interviewers used a speaking assessment sheet that addressed four components: comprehensibility, accent, sentence stress, and word stress, with each item receiving a score between 0 and 10 (see Appendix 1 for the individual scores of the participants). The speech comprehensibility of the students was not measured by using functional tests. Instead, we collected opinion scores by asking judges to estimate how much effort they thought it would take a listener to understand the passage as delivered by the students. The raters did not consult with each other in the rating process. The interview was done in

a language laboratory; the raters used the same laboratory later when the rating was performed. The criteria which the raters based their judgments were: comprehensibility, (native-like) accentedness, appropriateness of sentence stresses, and correct word stress.

3. Results

In the experiment the interpreting performance of three groups of 15 students was rated twice (pretest, posttest) by three independent raters on four evaluation criteria. Interrater agreement was established for each of the four rating scales separately, by computing the Intra-class Correlation Coefficient (ICC, which is equivalent to Cronbach's alpha) for the 90 judgments given by each of the three raters. All ICC values were in excess of .750 (Comprehensibility; .854, Accentedness: .836, Word stress: .777, Sentence stress: .794), which is generally considered the threshold for good agreement among raters (e.g., Koo and Li, 2016, p. 158; Portney and Watkins, 2000). The overall rating (the unweighted mean of the four scales) yielded an ICC of .939, which is considered an index of excellent agreement among raters. On the strength of this finding, we decided to perform all subsequent statistical analyses on the judgments averaged over the three raters.

Table 3 shows the scores obtained by the three groups of participants on the four rating scales in the pretest and in the posttest. It also shows the deltas or gains for the four scales, i.e., the difference between the posttest score and the pretest score. Given that the pretest and posttest were of equal difficulty we will assume that the gain should be positive, even for the control group, although the gain is expected to be larger for the experimental groups. Oneway Analyses of Variance were computed for each scale in pre and posttest, on the gain variables and on the unweighted means of the pretest scores, posttest scores, and gains. Since three groups are being compared, post-hoc Duncan tests ($\alpha = .05$) were computed whenever the effect of group was significant. The raw scores are included in Appendix 1.

In the pretest, there is no difference between the three groups of participants on the rating scales for Sentence stress and Word stress; the ANOVAs have F-ratios below 1. The Control group has significantly better scores on the Comprehensibility scale than the two experimental groups. This advantage is offset, however, by the Control groups' lower scores on the Accentedness scale, so that, overall, the three groups do not differ significantly from each other. We therefore consider the three groups equal at the start of the treatment.

In the posttest, only the rating for Accentedness differed significantly by group. The post-hoc test indicates that the Intelligibility group obtained a significantly higher rating than the Control group; however, the Nativeness group differed neither from the Control group nor from the Intelligibility group.

To ascertain whether the participants' performance on the posttest was significantly better than on the pretest (i.e., the gain variables in Table 3), we performed a series of t-tests for correlated samples, one test for each of the four criteria, separately for each group. The results are shown in Table 4.

Table 4 shows that students performed better on the posttest than on the pretest for each performance criterion, as well as for the overall performance (unweighted mean of the four criteria), in each of the three groups. The overall gain was always significant. The gain was significant for all parameters in the Intelligibility group, but only for one criterion in the Control and Nativeness groups. The gain was always larger for the Intelligibility group than for the other two groups (Table 3), but this is not reflected in the effect size (Table 4). The reason is that the individual gains per participant are more variable in the Intelligibility group (see the standard deviations in Table 3) than in the other two groups.

Now that we have established that there is no systematic difference between the three groups of participants prior to the treatment, and that all groups saw a significant overall improvement from pretest to posttest, as well as significant improvements on at least one of the four rating scales, we will focus the next part of the data analysis on the gain values

only. The effects of the treatment on the gain from pretest to posttest are shown graphically in Fig. 1, broken down by rating scale and participant group. Supporting descriptive and inferential statistics can be found in Table 3.

Generally, the gain obtained by the Intelligibility group (.87) is larger than that of the other two groups (.21, .27). The main effect of group on gain is significant by a repeated measures ANOVA with Rating scale (Assessment criterion) as a within-participants factor and Instruction group as a between-participants factor, $F(2, 42) = 8.7$ ($p = .001$, p$\eta^2 = .293$). The gain differs somewhat per rating scale, between .27 and .59 but the effect does not reach significance, $F(3, 126) = 1.7$ ($p = .187$, p$\eta^2 = .038$), and none of the four criteria differs significantly from any of the others ($\alpha = .05$, with Bonferroni correction for multiple comparisons).[2] The slight interaction between Scale and Instruction group suggested by Fig. 1 is not significant, $F(6, 126) = 1.3$ ($p = .268$, p$\eta^2 = .059$).

As can be seen in Fig. 1, the effect of treatment is strongest for Comprehensibility; the post-hoc test (Table 1) shows that the Intelligibility group gained significantly more in Comprehensibility than the other two groups, which did not differ from each other. The same effect, but smaller, is seen for the gain of Accentedness such that the Intelligibility group gained significantly more than the Nativeness and Control groups, which did not differ from one another. No significant effects of Instruction group were found for the remaining two assessment criteria, i.e., Word stress and Sentence stress, although the Nativeness group gained more than the Comprehensibility group, which in turn gained more than the Control group.

Comprehensibility is a global property of a speaker, which should be predictable, to some extent at least, from specific phonetic properties of the delivery. We, therefore, performed a multiple linear regression analysis with Accentedness, Sentence stress, and Word stress as predictors of Comprehensibility, in stepwise forward mode. The scores obtained in the pretest and posttest were included in the analysis, yielding a dataset with 90 cases. Table 5 shows the correlation matrix for the four variables, overall and separately for the pretest and posttest scores.

Table 5 shows moderate correlations between the three phonetic properties and Comprehensibility, with $.602 < r < .851$. Intercorrelations between phonetic predictors range between $r = .485$ and .872. The best prediction of Comprehensibility was afforded in the combined results of the pretest and posttest.[3] Correct use of Sentence stress is the first predictor selected by the analysis, and accounts for 67 percent of the variance in the rating of the speaker's comprehensibility. Including Accentedness and Word stress in the model increases R^2 with another 5 and 3 percent, respectively, yielding a total R^2 of 75 percent of the variance accounted for. All three phonetic predictors make a significant contribution, with beta coefficients of .432, .255 and .283 for Sentence stress, Accentedness, and Word stress, in that order.

4. Discussion

In the present study, we compared the merits of the Nativeness approach versus those of the Intelligibility approach to developing speaking skills in English by interpreter trainees with Persian as their

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[2] Greenhouse-Geiser correction was applied when the mean squares were computed but we report the nominal (integer) degrees of freedom.

[3] The correlation coefficients obtained in the posttest are generally higher than their counterparts in the pretest. This is probably due to the fact that the three groups diverged more in the posttest, as a result of the differential treatment, than in the pretest. Especially the Intelligibility group does better in the posttest, so that the range of scores across the three groups is systematically increased for all four scales (as well as for the mean of the scales). The greater difference in mean ratings per group boosts the correlation coefficients in the posttest (see the raw data in Appendix 1 for details).

Table 3
Mean and standard deviation on four rating scales (plus mean of the scales) broken down by group and moment of testing. Gain is the difference between posttest and pretest. The effect of group is tested by ANOVA, with F-ratio (df1 = 2, df2 = 14), probability and effect size specified. Groups within curly brackets do not differ from each other by a Duncan post hoc test with α = .05 (only specified if ANOVA is significant; C = Control, N = Nativeness, I = Intelligibility). Significant p-values are bolded.

Group	Rating scale	Group/treatment						ANOVA			
		Control		Nativeness		Intelligibility					
		Mean	SD	Mean	SD	Mean	SD				
Pretest	Comprehensibility	5.49	.80	6.22	.64	5.56	.70	4.9	**.013**	.187	{CI} N
	Accentedness	5.67	.99	5.09	.79	5.36	.79	1.7	.198	.074	
	Sentence stress	5.58	.90	5.87	.73	5.76	.66	.5	.590	.025	
	Word stress	5.40	.77	5.76	.99	5.49	1.01	.6	.555	.028	
	Total	5.53	.74	5.73	.73	5.54	.68	.4	.685	.018	
Posttest	Comprehensibility	5.96	.78	6.36	.68	6.71	1.27	2.4	.104	.102	
	Accentedness	5.73	.76	5.11	.67	6.09	1.16	4.7	**.015**	.181	{CN} {NI}
	Sentence stress	5.76	.60	6.38	.83	6.44	1.25	2.5	.096	.106	
	Word stress	5.53	.91	6.18	.97	6.39	1.29	2.6	.087	.110	
	Total	5.74	.67	6.01	.73	6.41	1.18	2.1	.133	.092	
Gain	Comprehensibility	.47	.57	.13	.50	1.16	.92	8.5	**.001**	.289	{NC} I
	Accentedness	.07	.70	.02	.41	.73	.71	6.1	**.005**	.225	{NC} I
	Sentence stress	.18	.71	.51	.62	.69	.87	1.9	.170	.081	
	Word stress	.13	.68	.42	.77	.90	1.23	2.6	.085	.111	
	Total	.21	.27	.27	.39	.87	.68	8.7	**.001**	.293	{CN} I

Table 4
Significance of gain (improvement of score from pretest to posttest) for four performance criteria and for the mean of the criteria broken down by participant group. Significance was determined by t-tests for correlated samples, df = 14, one-tailed). Significant *p*-values are bolded.

Rating scale	Group/treatment					
	Control		Nativeness		Intelligibility	
	t	p	t	p	t	p
Comprehensibility	3.15	**.007**	1.03	.320	4.84	**< 0.001**
Accentedness	.37	.719	.21	.836	3.97	**.001**
Sentence stress	.97	.349	3.22	**.006**	3.07	**.008**
Word stress	.76	.458	2.12	.052	2.82	**.014**
Total	3.08	**.008**	2.69	**.017**	4.96	**< 0.001**

mother tongue, in comparison with a control group which received training in EFL speaking skills by the routine curriculum with no special emphasis on either attaining native-like pronunciation skills or on developing skills that optimize the learner's intelligibility. There were no overall differences between the three groups before the treatment started, as was shown by the assessment given by three experts who judged the student's performance on four rating scales, viz. intelligibility, degree of accentedness, appropriateness of sentence stresses, and correct placement of word stress. After the treatment, all three groups had gained significantly along at least one of the rating scales, as assessed by the same expert judges. Overall, the Intelligibility group gained more than the other two groups, indicating that the Nativeness approach did not contribute anything that was not already covered by the routine program.

More specifically, the Intelligibility group gained significantly more than either the Nativeness or the Control groups on the Comprehensibility scale and, to a lesser extent, on the Accentedness scale. No significant differences in gain could be established for the other two performance scales, i.e., Sentence stress and Word stress. Although the Comprehensibility group tended to gain more by the treatment than the Control group, no significance of this difference could be shown.

One would have expected a training program with special emphasis on nativelike pronunciation skills to yield superior performance on the
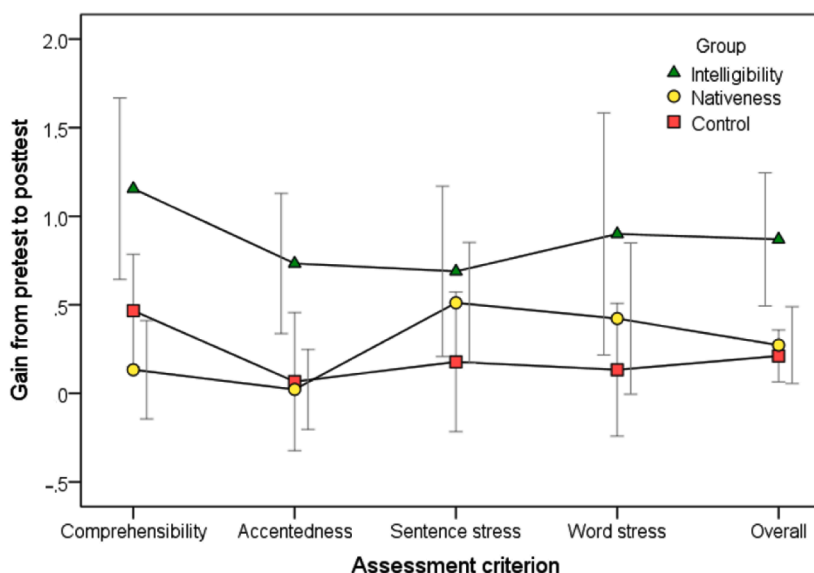

Fig. 1. Gain from pretest to posttest (between −10 and +10) for four assessment criteria and for overall assessment (unweighted mean of separate scales) broken down by participant group. Error bars are 95% confidence limits of the mean.

Table 5

Correlation matrices (non-redundant lower triangles only) for four variables in pretest ($N = 45$), posttest ($N = 45$), and tests combined ($N = 90$). All correlation coefficients are highly significant ($p < .001$).

	Pretest Compreh.	Accent.	Sent. stress	Posttest Compreh.	Accent.	Sent. stress	Combined Compreh.	Accent.	Sent. stress
Accentedness	.602			.779			.707		
Sentence stress	.733	.622		.851	.670		.820	.658	
Word stress	.694	.485	.609	.797	.657	.872	.771	.595	.781

Accentedness scale. However, this effect was not obtained. On the contrary, the group that gained most in native-like pronunciation ("Accentedness") was the Intelligibility group.

The correlation and regression analysis of the ratings indicates that comprehensibility, defined here as judged intelligibility of the speaker, is best predicted by the Appropriateness of sentence stresses. The degree of nativeness (i.e., lack of foreign/Persian accent) of the speaker is the second-strongest predictor and also correct placement of word stress contributes to judged intelligibility but less than (lack of) Accentedness. This mechanism seems at odds with the hypotheses we formulated for the relative merits of the Nativeness versus Intelligibility approaches.

The results of the present study converge with (Yenkimaleki and Van Heuven (2016a,b,2019a), who concluded that prosody awareness training significantly improves the interpreter students' speech intelligibility. The results also are in line with Yenkimaleki (2019), who concluded that the explicit teaching of suprasegmentals significantly improves the interpreter students' speaking skills. We argue that the interpreting curriculum can use the available time of the interpreter training program constructively if instructors employ the Intelligibility approach in the enhancement of interpreter trainees' speaking skills.

Levis (2015) pointed out that pronunciation teaching implications should be practical since most instructors in the EFL context are not researchers, and require help relating research findings in their classrooms. Levis (2005) stated that what teachers in EFL contexts need is a concrete set of recommendations of what to teach and what to ignore. Niebuhr et al. (2017) stated that the persuasive power and charm of a speaker (e.g., his/her charismatic impact) correlate strongly with intelligibility (Bresnahan et al., 2002), and, as second language teachers, rhetorical trainers and communication coaches are, too, confronted with the question of which pronunciation features they must necessarily teach and which they can pass over. Given that speech-based charisma training primarily depends on prosody (Niebuhr and Gonzalez, 2019), communication trainers will particularly benefit from the prosody training issues.

Some researchers (e.g., Levis, 2018) state that mispronunciations related to incorrectly placed word stress are a stronger barrier to a speaker's intelligibility than any mispronunciation at the segmental level. Levis (2018) stated that the negative effects of segmental and stress errors on word recognition are likely additive, but in ways that are far from being well understood. Levis concludes his explanations on rhythm by criticizing that, although mastering the target language's speech rhythm has a decisive influence on second language speech intelligibility, there is still little attention to it in the classroom.

Levis (2018) also stated that the traditional second language pronunciation-training concepts rely basically on minimal-pair exercises and would, thus, be too far away from actual communication scenarios and discourse-sized units, phenomena, and meanings. Levis maintained that pronunciation teaching should rather be a separate key aspect of second language teaching. Levis asserted that the final aim of second language teaching might not be to make students acquire native-like pronunciation. Intelligibility is required when the conversations take place worldwide among second-language speakers of English (Yenkimaleki and Van Heuven, 2019a). This is what second language teaching should focus on and what all second language learners can achieve. Levis (2018) pointed out that instead of wasting time and resources on comprehensibility, second language instructors should rather address

the full range of intelligibility issues, including those related to prominence, intonation, and the social aspects of communication. Levis (2018) emphasized that this demands a revisited approach to L2 pronunciation teaching that pays more attention to individual learners, for example, concerning their L1 background, and the specific situations in which they will use the L2.

Therefore, the real question is not whether prosody teaching is important to speech intelligibility but rather: can we predict how far the sounds in a word may deviate from the listener's norm before word recognition fails? When the listener is a non-native speaker of English, the answer depends on the interaction between the phonologies of the speaker's language and the listener's language. The closer the phonologies match, the better the chances of successful sound identification and word recognition (e.g., Wang and Heuven, 2015; Van Heuven, 2016; Van Heuven and Gooskens, 2017).

The results of this study could be implemented by software designers in designing specific software for instruction and training of pronunciation (such as Accent Master which is designed for Persian learners of English, see Mehrpour et al., 2016) through focusing on intelligibility in designing tasks and exercises (Yenkimaleki and Van Heuven, 2021a, b). The results of this study could also be implemented in the EFL curriculum for teaching English pronunciation in general, since this study just focused on the language issues of interpreter trainees. However, future studies are recommended in other contexts to confirm the generalizability of the results of this study for other language pairs.

5. Conclusion

This study investigated the relative contribution of the Nativeness vs. Intelligibility approaches for prosody instruction in developing speaking skills by interpreter trainees. Overall, the finding showed that prosody training has a positive impact on the speaking skills of both experimental groups; that they outperformed the control group. Furthermore, prosody training employing the Intelligible approach worked better in developing speaking skills than using the Nativeness approach .

The contribution of the present study to the growing body of literature on pronunciation teaching is that increased conscious attention in pronunciation materials to training students to monitor their production through the teaching of formal rules, noticing the differences, providing constructive feedback, and reflective activities result in the enhancement of speaking skills (Pennington, 1996; Yenkimaleki and Van Heuven, 2019c). Moreover, the study examined the separate effects of employing the Nativeness approach and Intelligibility approach on interpreter students' speaking skills in teaching prosody. We suggest that in the teaching of prosody authentic tasks should be provided for the students to make them reflect on the accuracy of their productions after the fact (e.g., post-hoc monitoring).

A limitation of this study was that the participants were 45 interpreter trainees. We did not have access to a larger number of interpreter trainees. Another study can be set up with larger number of trainees in other context to confirm the results of this study. Future research with other non-native languages could be done to investigate these issues further. The study could be extended to investigate these issues in junior or senior students, as the participants of this study were freshman interpreter trainees whose pretest proficiency scores in some cases were not very high . Similarly, the effect of the Nativeness vs. Intelligibility

approach in developing speaking skills could be investigated with other language pairs in which perception and production skills of interpreter trainees would be involved simultaneously.

The pedagogical implications of this study would pertain to the English instructors and practitioners in interpreter training programs (at least in Iran). The policymakers, curriculum developers, and administrators need to make some changes in the choice of appropriate approach in the overall curriculum of interpreter training programs.

Declaration of Competing Interest

Acknowledgement

Appendix 1. Scores (averaged over judgments given by three independent raters)

	Pretest scores					Posttest scores				
#	Compreh.	Accent.	Sent. stress	Word stress	Mean	Compreh.	Accent.	Sent. stress	Word stress	Mean
Control group										
1.	7.33	8.00	6.67	6.00	7.00	7.67	7.33	6.67	6.33	7.00
2.	6.67	7.33	6.67	6.33	6.75	6.33	6.33	6.00	6.33	6.25
3.	6.33	6.33	6.67	5.67	6.25	6.00	6.67	6.67	6.67	6.50
4.	5.67	5.33	6.67	7.33	6.25	7.00	6.67	6.67	6.67	6.75
5.	6.00	6.00	5.00	6.00	5.75	6.00	5.33	6.00	6.67	6.00
6.	5.33	6.33	6.33	5.00	5.75	7.00	6.33	5.33	6.33	6.25
7.	5.00	5.33	6.33	5.33	5.50	5.33	5.33	5.67	5.67	5.50
8.	5.33	5.33	5.33	5.00	5.25	6.33	5.67	6.00	5.00	5.75
9.	5.67	5.33	5.33	4.67	5.25	5.67	5.00	6.00	5.33	5.50
10.	5.00	5.33	4.33	5.33	5.00	5.67	5.33	5.67	4.33	5.25
11.	5.00	4.67	5.00	5.33	5.00	5.33	5.33	5.00	4.33	5.00
12.	4.67	4.67	5.67	5.00	5.00	5.33	5.33	5.00	5.00	5.17
13.	5.00	4.67	4.67	4.67	4.75	5.00	5.67	5.00	4.33	5.00
14.	4.67	4.67	4.67	5.00	4.75	5.33	5.00	5.33	5.33	5.25
15.	4.67	5.67	4.33	4.33	4.75	5.33	4.67	5.33	4.67	5.00
Mean	5.49	5.67	5.58	5.40	5.53	5.95	5.73	5.76	5.53	5.74
SD	.79	.99	.90	.77	.74	.78	.76	.60	.91	.67
Intelligibility group										
1.	6.67	6.67	7.33	6.00	6.67	9.00	8.00	8.33	8.33	8.42
2.	6.67	6.00	6.33	6.67	6.42	8.33	7.00	8.33	8.33	8.00
3.	6.33	6.67	6.67	6.67	6.58	9.00	8.67	8.67	8.67	8.75
4.	6.00	5.67	6.00	6.33	6.00	7.67	6.33	7.67	8.00	7.42
5.	6.00	5.67	5.33	7.33	6.08	6.67	6.67	6.67	5.67	6.42
6.	5.67	6.00	6.00	5.00	5.67	5.00	5.00	5.00	5.50	5.08
7.	5.67	5.00	6.00	5.33	5.50	6.33	6.67	6.33	6.00	6.33
8.	5.33	5.00	5.67	6.33	5.58	6.67	6.00	5.33	5.33	5.83
9.	4.67	6.00	5.33	4.33	5.08	6.33	6.00	6.00	6.33	6.17
10.	5.33	4.67	5.67	5.33	5.25	6.67	5.67	6.33	5.33	6.00
11.	5.33	4.33	5.67	4.33	4.92	5.67	5.00	6.00	6.33	5.75
12.	4.67	4.67	5.00	5.00	4.83	5.67	5.33	5.00	4.67	5.17
13.	5.33	5.00	5.00	4.67	5.00	6.33	5.33	6.33	6.00	6.00
14.	5.33	4.67	5.33	4.00	4.83	5.00	5.00	5.33	6.00	5.33
15.	4.33	4.33	5.00	5.00	4.67	6.33	4.67	5.33	5.33	5.42
Mean	5.56	5.36	5.76	5.49	5.54	6.71	6.09	6.44	6.39	6.41
SD	.70	.79	.66	1.01	.68	1.27	1.16	1.25	1.29	1.19
Nativeness group										
1.	7.33	7.00	7.00	6.67	7.00	8.00	6.67	7.67	7.67	7.50
2.	7.00	6.00	7.00	7.00	6.75	6.33	5.33	7.00	6.33	6.25
3.	6.67	5.67	6.67	7.00	6.50	7.67	5.67	7.67	8.00	7.25
4.	7.00	5.67	6.33	7.00	6.50	6.33	5.67	6.33	6.67	6.25
5.	7.00	5.33	6.33	7.33	6.50	6.67	5.67	7.00	6.67	6.50
6.	6.33	5.67	6.00	6.00	6.00	6.67	5.33	6.33	6.67	6.25
7.	6.00	5.00	5.67	5.33	5.50	6.00	5.33	6.33	6.33	6.00
8.	6.00	4.67	6.33	5.00	5.50	6.00	5.33	7.00	7.00	6.33
9.	6.00	4.33	5.00	5.67	5.25	6.00	4.67	6.33	5.00	5.50
10.	5.67	4.33	5.67	5.33	5.25	6.33	5.00	6.00	5.67	5.75
11.	6.00	4.67	5.67	4.67	5.25	5.67	4.67	4.67	5.00	5.00
12.	6.00	4.00	5.33	4.67	5.00	6.33	4.33	5.67	4.67	5.25
13.	5.33	4.67	5.00	5.00	5.00	6.00	4.33	6.67	6.00	5.75
14.	5.33	4.67	5.33	4.67	5.00	5.67	4.33	5.67	5.33	5.25
15.	5.67	4.67	4.67	5.00	5.00	5.67	4.33	5.33	5.67	5.25
Mean	6.22	5.09	5.87	5.76	5.73	6.36	5.11	6.38	6.18	6.01
SD	.64	.79	.73	.99	.73	.68	.68	.83	.98	.73

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