

On the Irrelevance of Sounds and Prosody in Foreign-Accented English

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Abstract The author argues that current research on phonetic priorities in ELT, with its focus on segments and prosody, is misguided and that emphasis should be shifted towards learners' training in the production of words whose idiosyncratic erroneous rendition does not result from their inability to articulate foreign sounds correctly, but which is caused by various interference factors (e.g. *Disney* pronounced by many Polish learners as [dʲisnej]). It is argued that the use of such severely distorted items (local errors) has grave consequences for linguistic communication, more serious than segmental and suprasegmental inaccuracies (global errors) and should, therefore, be pedagogically prioritized. In order to verify this claim, two experiments have been carried out in which 40 native-speakers of English were asked to assess two phonetic versions of the same passage: one produced by a Polish learner of English with poor segmental and suprasegmental pronunciation, but no major phonological distortions of words, and another recording made by a speaker with the correct rendition of segments and prosodies, but with several seriously mispronounced words, common in Polish English. The assessment concerned the samples' degree of comprehensibility, foreign-accentedness and annoyance for the listeners. The experimental data show that on all three counts the participants' judgements were more severe in the case of the version with local errors than with global errors. The same results were obtained in the second experiment in which the samples' intelligibility was examined in a dictation test.

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1 Introductory Remarks

In view of various pressures imposed by course requirements and having a limited time for teaching pronunciation, an English teacher faces numerous dilemmas. Which elements of English phonetics should be selected for instruction? Should the focus be on segments or rather on prosody? Which properties of English consonants and vowels, and which prosodic features should be given close attention and which can be neglected with little loss for communication? In brief, the following question inevitably arises: what are the pedagogical priorities in English pronunciation instruction?

Clearly, there is no simple answer to these queries since pedagogical priorities, as argued by Celce-Murcia et al. (2010), can only be established when different variables of the teaching process are taken into consideration, such as its participants and their linguistic background, their specific needs and problems. Nevertheless, as emphasized by many pronunciation specialists (e.g. Kenworthy 1987; Derwing and Munro 2005), they should be set in such a way as to ensure achieving what is the primary goal for the majority of learners, i.e. intelligibility.

A distinction should be made between *basic intelligibility*, which allows for rudimentary communication, but puts a considerable strain on the listener and requires much effort on their part to understand the message and *comfortable intelligibility*, to use Abercrombie's (1949) term, which puts little or no strain on the listener.

While achieving comfortable intelligibility is frequently accepted as the main target of phonetic instruction, there is no agreement as to the role which specific aspects of English pronunciation play in it. According to some researchers, these are mostly segmental errors that impede intelligibility (e.g. Jenkins 2000), while according to others (e.g. Derwing and Munro 1997) these are prosodic inaccuracies that are detrimental to it. In view of such controversies, as argued by Field (2005, 399), "the most pressing issue in L2 pronunciation research today is the quest to identify the factors that most contribute to speaker intelligibility."

In this paper we intend to advance a claim that recent pronunciation research on intelligibility which focuses on the role of various segmental contrasts and different aspects of prosody, i.e. on the so-called *global errors* made by the learners, fails to take into account a particularly important aspect of foreign-accented English, namely that of numerous seriously deformed words the use of which, as we shall argue, frequently hinders successful communication far more than other phonetic errors. Apparently learners of English find many words of this language difficult to remember in their phonetic shape not because they contain problematic sounds or sound sequences, but due to a variety of interference factors (discussed in Sect. 2). To put it differently, the items in question, often referred to as *local errors* (Sobkowiak 1996) or *item errors*, are stored in the learners' phonetic memory with phonologically deviant representations.

For instance, many Polish learners of English mispronounce a phonetically seemingly simple word *foreign* as [fo'rejn] although it contains no particularly difficult segments and has penultimate stress which is typical of Polish. Clearly,

Table 1 Characterizing global and local errors

Global errors	Local errors
Recurring mispronunciations of foreign sounds and prosodies which create a foreign accent and result mainly from L1 phonological and phonetic transfer, e.g. E jazz > PE [džes] E foreign > PE [fɔrˈɪn]	Idiosyncratic mispronunciations of individual words in which, apart from global errors, there are other phonological and phonetic deviations from the original, due to various interference factors. They are stored in the learner's phonetic memory with the incorrect segmental and/or prosodic structure, e.g. E foreign > PE [fɔ'rejn], E Disney > PE [dʰisnej]

the digraph <ei> that occurs in spelling suggests to Poles a diphthongal pronunciation (found, for instance, in items with the same sequence of letters, such as *reign* and *feign*) or, to be more exact, a sequence of a vowel and the palatal glide. The ultimate stress placement, alien to Polish, is somewhat more mysterious. It can be attributed to the presence of what is assumed to be a heavy stress-attracting final syllable (as in *insane*, *polite*) or to analogy with the stress pattern of words with the prefix *for-*, such as *forget*, *forgive* and *forbid*. The same item, when pronounced without such distortions is rendered in Polish English as [fɔrˈɪn]. In this version global errors are present, i.e. each English segment is replaced with a corresponding Polish consonant and vowel, with an additional palatalization of the rhotic by the following high front vowel.

Thus, phonetically deviant words which are examined in this paper are characterized by segmental errors in which English phonemes are substituted not by their closest counterparts in the learners' native language (e.g. the replacement of the English glottal fricative with the Polish velar fricative), but by segments which are phonologically and phonetically often remote from them (e.g. English /ɪ/ rendered as Polish [ej]). Such substitutions frequently involve more segments than one (as in *Disney* pronounced as [dʰisnej]) and may be accompanied with the incorrect placement of stress (e.g. *foreign* realized as [fɔ'rejn]).

Table 1 sums up the above discussion on the distinction between global and local errors.¹

While the exact number of local errors is evidently impossible to establish as it largely depends on the learners' level of language proficiency and their individual phonetic aptitude, it is certainly large enough to deserve a prominent place in pronunciation instruction. Sobkowiak (1996) presents about 700 of what he calls "words commonly mispronounced" in Polish English, but this list can easily be extended, particularly if we include numerous proper names like *Disney*, *Turner* or *Presley*, which are also problematic for foreign learners.

¹ The distinction between global and local errors is not always sharp. It is not clear, for instance, how to classify the overgeneralization that the <ate> sequence is often interpreted as [eit] in nouns, such as *certificate*, *climate* or *palate*. Such errors are local in the sense that they concern a particular sequence of letters, but are not restricted to a single item.

The importance of local errors lies not only in their large number, but in their high frequency in learners' English, a considerable degree of fossilization and resistance to improvement.

It should be noted that the failure to make a distinction between global and local errors has often some serious consequences and leads to false conclusions. Jenkins (2000), for instance, claims that the quality of vowels is generally irrelevant in her Lingua Franca Core, which is supposed to ensure mutual intelligibility of international users of English, except for the vowel known as long schwa, as in *girl*, *burn*, *firm*. As pointed out by Szpyra-Kozłowska (2005), it is fairly surprising why of all English vowels the least frequently occurring monophthong (Cruttenden 1994, 136) should be singled out as crucial for intelligibility. Jenkins provides only two examples in which the mispronunciation of this segment led to communication breakdowns in her data, i.e. *bird* pronounced as *bard* and *birthplace* realized as *bathplace*. It seems that the problem probably does not concern her informants' inability to articulate this particular vowel—no such evidence has been provided, but involves instances of local errors that result from the incorrect encoding of these particular items in the learners' memory. A similar type of mispronunciation can frequently be observed in Polish English, where *Turner* is often pronounced as *Tarner*, *Murphy* as *Marphy* and *purple* as *parple*, which has nothing to do with the difficulty of producing long schwa by Poles, but follows from an incorrect overgeneralization concerning the realization of the letter <u> as some kind of [a]-like vowel. If this reasoning is correct, international learners of English should be given phonetic training not so much in the production of long schwa as in the pronunciation of problematic words, such as *bird*, *birth*, *Turner* or *purple*, possibly coupled with the teacher's comments on some letter-to-sound correspondences. Similarly, Avery and Ehrlich (1992), in their advice to pronunciation instructors, maintain that Polish learners of English should be trained in the production of [v], as they often say *willage* or *walley* instead of *village* and *valley*. This is another obvious instance of confusing local errors with global ones since Poles do not have to practice the labiodental fricative as it is found in hundreds of Polish words. What they do need to practice, however, is to pronounce the words *village* and *valley* with the initial fricatives and not labiovelar glides.

In what follows we are going to argue that local errors, extremely frequent in learners' English and generally disregarded both in teaching materials and in current pronunciation research, pose a considerable threat to various aspects of effective communication and intelligibility in particular. Consequently, they should be regarded as a top pedagogical priority.

2 Sources of Local Errors

The question that arises in connection with the conclusion arrived at in the preceding section is why the serious issue of phonetically distorted words fails to be addressed in phonetic manuals. In order to answer it, it is necessary to examine the major sources of such local errors. Their classification presented below is largely based on Sobkowiak (1996).

2.1 Interference from Polish

Consider the examples below.

(1) (a) Interference from sound	(b) Interference from spelling
E author > PE [awtor] (P <i>author</i>)	E front > PE [front] (E <o> > PE [o])
E balsam > PE [balsam] (P <i>balsam</i>)	E <i>pint</i> > PE [p ⁱ int] (E <i> > PE [i])
E fauna > PE [fauwna] (P <i>fauna</i>)	E <i>mountain</i> > PE [mowtajn] (E <ou> > PE [ow])
E alibi > PE [a ^l i ^b i ^l i] (P <i>alibi</i>)	E <i>tomb</i> > PE [tomp] (E > PE [b/p])

This group of errors is caused by interference from Polish pronunciation and spelling. The items in (1a) are found not only in English, but also in Polish since they are cognates, i.e. either borrowings from English or other languages (mostly Latin and Greek). Consequently, Polish learners, while speaking English, frequently pronounce them in the same way they do in their native language. A particularly numerous subgroup comprises proper nouns, such as *Presley* (pronounced as [preslej], *Streisand* ([strejsant]), *Ottawa* ([o'ttava]). The examples in (1b) are cases of spelling pronunciation in which English letters are interpreted according to the Polish letter-to-sound rules. Since Polish spelling is more phonemic than English, in the former almost all letters are pronounced. Thus, many items in this set comprise silent letters (e.g. *answer*, *half*, *tomb*).

2.2 Interference from English

Let us now turn to the errors which originate due to learners' familiarity with English.

(2) (a) Interference from sound	(b) Interference from spelling
<i>says</i> > PE [sejs] (<i>say</i>)	<i>butcher</i> > PE [bačer] (E <u> > PE [a], <i>cut</i>)
<i>southern</i> > PE ['sawdern] (<i>south</i>)	<i>climate</i> > PE [klajmejɪ] (E <ate> > PE [eit], <i>mate</i>)
<i>variety</i> > PE ['ver ⁱ jetɪ] (<i>various</i>)	<i>blood</i> > PE [blut] (E <oo> > PE [u], <i>food</i>)
<i>knowledge</i> > PE ['nowl ⁱ ič] (<i>know</i>)	<i>key</i> > PE [kej] (E <ey> > PE [ei], <i>grey</i>)

(2a) contains examples of errors triggered by the pronunciation of related, usually more frequently used English words. For example, the diphthong of *know* is transferred to the phonetic rendition of *knowledge*. The items in (2b) are often mispronounced due to incorrect overgeneralizations concerning English spelling-to-sound rules. For instance, the fact that <oo> in many words is pronounced as [u:], (*food*, *root*, *loose*), often leads to an erroneous assumption that this is true in

other cases as well. Consequently, *blood* is frequently mispronounced in Polish English as [blut]. It should also be added that many errors have multiple sources. For example, the word *says*, often mispronounced as [sejs], results both from the pronunciation of the infinitive with the diphthong as well as from the written form in which the digraph <ay> suggests a diphthongal realization (as in *may*).²

The above brief discussion on the major sources of local errors provides an explanation why such cases are generally not discussed in phonetic manuals published by big (frequently international) publishing houses. Since the majority of such books are addressed to international learners of English, their authors probably assume that local errors, resulting from the negative transfer between L1 and L2, are L1-specific, and usually focus on more general pronunciation issues of interest to a larger audience. Another reason for this neglect might be the assumption that this is a small-scale local phenomenon, unworthy of more assiduous attention. Finally, local errors seem more typical of EFL learners rather than of ESL learners as the former are exposed to written English more often than to spoken language while the opposite is true of the latter. The majority of pronunciation instruction textbooks (e.g. Celce-Murcia et al. 1996) concern primarily the ESL context.

3 A Local Phenomenon?

In order to check how widespread local errors indeed are, we have examined the way learners from several countries pronounce 50 items problematic for Poles. 15 students of 5 different nationalities, all intermediate to advanced learners of English, attending an English language school in Dublin were recorded having been asked to read a list of words prepared by the author. It has turned out that all the items were mispronounced by the majority of the subjects, regardless of their mother tongue. Table 2 presents a selection of learner versions of ten such words.³ Of course many other phonetically incorrect renditions of the test items can be encountered.

Even this small set of data is sufficient to show that we are dealing here with a problem that concerns not only Poles, but other learners of English with different first language background as well. Interestingly, the same items turned out to be phonetically difficult for the participants, which suggests that a list of words prone to distortion by various international users of English can probably be compiled. This, however, remains a task for future research.

² Interestingly, other languages might also be a source of pronunciation errors. A case in point is the word *lieutenant*, frequently rendered by Polish learners as [lojtnant], undoubtedly due to its German version, made popular in Poland by war movies. German influences are also responsible for the mispronunciations of initial consonant clusters in names such as *Spielberg* > PE [ʃpilberk] or *Steinbeck* > PE [ʃtajnbek].

³ The forms provided in the table are only rough approximations of the recorded items. This means that one symbol often stands for variety of sounds, e.g. [a] represents an open unrounded vowel whose backness varies, however, from language to language.

Table 2 Phonetic versions of ten items produced by learners of five nationalities

Tested items	Brazilian Portuguese	Mauritian Creole	Mexican Spanish	Italian	Polish
<i>meadow</i>	[miːdow]	[ˈmiːdow]/ [ˈmidow]	[ˈmiːdow]/ [ˈmidow]	[ˈmiːdow]	[ˈmɫiːdow]
<i>climate</i>	[kliˈmeit]/ [ˈklimat]	[ˈklaimet]	[ˈklimeit]/ [ˈklaimeit]	[ˈklaimet]	[ˈklajmejt]
<i>guinea pig</i>	[giˈnea pik]/ [ˈgwinja pik]	[ˈgaini pik]/ [giˈnea pik]	[giˈnea pik]	[giˈnea pik]	[gvʲiˈnea pʲik]
<i>preface</i>	[ˈpriːfeis]/ [ˈpɛfaːs]/ [preˈfeis]	[ˈprifeis]	[[preˈfeis]/ [ˈpriːfeis]	[ˈpriːfeis]	[ˈprʲifejs]
<i>colonel</i>	[ˈkolonel]	[ˈkolonel]	[ˈkolonel]	[ˈkolonel]	[koˈlonel]
<i>captain</i>	[ˈkaptajn]	[ˈkaptejn] [ˈkaptajn]	[ˈkaptajn]	[ˈkeptajn]	[ˈkeptejn]
<i>Leonard</i>	[ˈleonart]	[ˈliːonaːrd] [ˈleonar]	[ˈliːonart]	[ˈleonart]	[ˈɫionart] [ˈleonar]
<i>mountains</i>	[ˈmountains]	[ˈmountinz] [ˈmauntin]	[ˈmountains] [ˈmoutejns]	[ˈmontejns] [ˈmauntejns]	[ˈmoutajns] [ˈmontejns]
<i>vegetables</i>	[vedʒiˈtabls] [vedʒiˈtebls]	[vedʒiˈtejblz] [vegiˈtejbl]	[ˈvedʒetebls]	[ˈvejdʒetebels]	[vedʒeˈtejbls]
<i>Turkey</i>	[ˈturkaj]	[ˈtʃːrkej]	[ˈtorki] [ˈturki]	[ˈtorki]	[ˈtarkʲi]

4 The Experiment

In order to investigate the impact of local and global errors on communication via English, we have conducted a two-part experiment whose design and results are presented in the following sections.

4.1 Goals

The major goal of the experiment has been to examine English native speakers' judgements concerning two types of mispronunciations commonly made by Polish learners: one which involves segmental and suprasegmental inaccuracies, i.e. global errors, but which is devoid of local errors, and another version which is segmentally and prosodically correct, i.e. in which there are no global errors, but where local errors can occur. Our aim was to find out how these two types of inaccuracies are evaluated by native-speakers of English in terms of comprehensibility, intelligibility, foreign accentedness and the degree of irritation/annoyance they trigger in native listeners.

A comment on the choice of English native speakers as judges is in order. In spite of numerous attempts to marginalize their role in linguistic communication via English and depriving them of the ownership of this language (e.g. Jenkins

2000; Widdowson 1994), there is no doubt that, in view of massive emigration of Poles to the British Isles that has taken place in recent years, native speakers' perception of Polish-accented English remains of vital importance in setting phonetic priorities for thousands of Polish learners.

4.2 Experimental Design: Part 1 and Part 2

The experiment consisted of two parts in which the same diagnostic passage and the same recording procedure were employed. They are summarized below.

4.2.1 Diagnostic Passage

For the purposes of the experiment a brief, five-sentence text containing 20 words commonly mispronounced by Polish learners of English was written by the author. The test items are transcribed below in their Polish English versions. In some cases several commonly occurring variants are provided. The transcription symbols refer to Polish sounds.

<i>Disney</i> [dʲisnej]	<i>colonel</i> [ko'lonel]	<i>captain</i> ['keptejn/'keptajn]
<i>worked</i> [workt/workit]	<i>Turkey</i> [tarkʲi/'tarkej]	<i>radar</i> ['radar]
<i>butcher</i> ['bačer]	<i>nurse</i> [nars]	<i>mountains</i> ['mowtajns/'mawtejns]
<i>climate</i> ['klajmejt]	<i>area</i> [erʲija]	<i>soup</i> [sowp]
<i>steak</i> [stʲik]	<i>lettuce</i> [letʲjus]	<i>Cabin</i> ['kejbʲin]
<i>foreign</i> [fo'rejn]	<i>fruit</i> [fruit]	<i>Japan</i> ['džapan/'džepən]
<i>walk</i> [wolk]	<i>meadow</i> [mʲidow]	

The local errors which occur in these forms stem from different sources. Most of them result from the interference of English spelling and involve pronouncing silent letters (*walk*, *fruit*), incorrect overgeneralization of English spelling-to-sound rules (e. <u> interpreted as P [a]) in *butcher*, *nurse*, *Turkey*, <ea> pronounced as [i] in *steak*, *meadow*, <ate> as [eit] in *climate*, <ai> and <ei> as [ei] in *captain*, *foreign*, *mountains*) and interference from Polish pronunciation (*radar*, *Japan*).

The diagnostic passage is presented below:

The *Disney* family met for dinner in an old *mountain cabin* in the *area* which they liked for its *climate*. The two eldest brothers, a *colonel* and a *captain*, had just returned from *Turkey* and *Japan* where they *worked* on a *radar*. The youngest brother, who was a *butcher*, and their sister, who was a *nurse*, never went to *foreign* countries. They envied their brothers exciting jobs and asked many questions. After a meal of *soup*, *steak*, *lettuce* and *fruit*, they all went for a *walk* in the *meadow*.

It should be noted that the comprehension of this passage is aided by several factors. First of all, it is short and simple, without difficult vocabulary and complex

syntactic structures. Secondly, it is grammatically correct. Finally, the test items are used in sentences which provide rich contextual (semantic, lexical and syntactic) information, crucial in aiding the comprehension task.

4.2.2 The Recording

The passage presented in the previous section was recorded in two versions produced by two adult Polish men.

- (a) Version A—here the speaker, an intermediate learner of English, read the passage using consonants, vowels and prosodies typical of Polish English, but without any major distortions of words provided in [Sect. 4.2.1](#). (global errors, but no local errors).
- (b) Version B—in this case the speaker, an English phonetics teacher, employed English sounds and prosodies, but mispronounced the test items in the manner indicated in [Sect. 4.2.1](#). (local errors, but no global errors).

It should be added that both samples are characterized by a comparable speaking rate, volume and clarity of articulation, which factors, according to Derwing and Munro (1999), affect the comprehension of accented speech.

4.3 Part 1

4.3.1 Participants

In the first part of the experiment the participants were a group of 20 adult native speakers of Irish English, of mixed sex, aged between 25 and 55, all inhabitants of Dublin and having college education. The majority of them are teachers of English, employed in a language school and teaching English to foreigners from various countries. Thus, all the subjects are familiar with different versions of foreign-accented English. They all admit to having conversed in English with many Poles.

4.3.2 Evaluation

The participants were divided into two groups of ten persons each. The first group listened to Version A while the second group listened to Version B. Then they were all asked to complete a questionnaire which contained four questions. The first of them was intended to measure the comprehensibility of the recoded samples and asked how easy/difficult it was to understand the speaker. The next question concerned the evaluation of the speakers' accentedness and inquired how native/foreign the speaker's accent sounded to the subjects. Question 3 dealt with

Table 3 Experimental results—part I

Question	Speaker A (global errors, no local errors)	Speaker B (local errors, no global errors)
Comprehensibility	1.5 (very easy/rather easy to understand)	2.72 (rather difficult to understand)
Foreign accent	2.5 (slight foreign accent/rather strong foreign accent)	2.9 (rather strong foreign accent)
Annoyance	1.3 (not irritating at all/somewhat irritating)	1.9 (all options—from not irritating to very irritating)
Most important pronunciation errors	Flat intonation, no pauses in listing foods, every syllable pronounced too carefully	Mispronounced words: <i>soup, Turkey, nurse, worked, fruit, steak, captain, meadow</i> , etc.

the degree of irritation/annoyance caused by the speaker's pronunciation in the listener. Finally, the participants were requested to list those pronunciation inaccuracies which they considered particularly grave. The subjects selected one of the four answers to questions 1, 2 and 3, which were then given numerical values from 1 to 4 (the higher the score, the harsher the judgement). Subsequently mean scores for every question were calculated.

4.3.3 Results

The experimental results are summarised in Table 3.

The data show that the evaluations of the degree of comprehensibility, foreign accent and annoyance on all three counts are more severe in the case of Speaker B. Thus, Speaker A scored 1.5 points for comprehensibility with the assessment varying from 'very easy' to 'rather easy to understand,' while Speaker B's speech, with 2.72 points, was regarded as 'rather difficult to understand.' The differences in the evaluation of foreign-accentedness were somewhat less marked; Speaker A, with 2.5 points, sounded slightly foreign to half of the subjects and strongly foreign to the other half, whereas Speaker B was described by the majority as having a rather strong foreign accent, which supports observations made by other researchers (e.g. Derwing and Munro 1997) that native-speakers' accent ratings are harsher than comprehensibility ratings.

Speaker A's accent was generally viewed as 'not irritating at all' (1.3 points) while in the evaluation of Speaker B's pronunciation, with the general score of 1.9 points, there was no agreement between the subjects who employed all the options presented in the questionnaire, from 'not irritating at all' to 'very irritating.' Apparently, native listeners differed considerably in their degree of tolerance of local errors made by Speaker B, but were not annoyed by Speaker A's global errors.

It is interesting to note that in the case of Speaker A there was a strong correlation between answers to question 1 and 3. This means that the fact that Speaker A was judged as being easy to understand correlated with the opinion that his pronunciation was not annoying for the listeners, regardless of the assessment of his accentedness. As to Speaker B, here a correlation was noted between answers to questions 1 and 2. In other words, the ease or difficulty of understanding this speaker correlated with the assessed degree of his foreign accent.

Finally, the last question was open and asked the participants to list those pronunciation errors in the two samples which they considered particularly grave. The majority of comments on Speaker A's version concerned prosodic issues. He was claimed to have flat intonation, to make no pauses where they were required and to use too careful pronunciation ("e.g. each and every syllable pronounced too carefully and in a precise manner, there is no flexibility that a more fluent and confident speaker would have"). Interestingly, no segmental inaccuracies of this speaker were pointed out ("e.g. I did not really find too many errors in his pronunciation"). In the case of Speaker B the participants presented lists of mispronounced words with frequent comments, such as "I would normally have no problem understanding a Polish accent, but this one was difficult."

4.4 Part 2

4.4.1 Participants

Twenty subjects participated in the second part of the experiment. They were all educated (university degree) adult (aged 28–57) native speakers of English English, of mixed sex, living in London and working at an exhibition centre. They admitted having minimal contacts with Poles and Polish-accented English.

4.4.2 Evaluation

The participants formed two groups of ten persons each whose task was to transcribe orthographically the diagnostic passage in Speaker A's version (Group 1) and Speaker B's version (Group 2) in order to examine how intelligible the two versions were. Breaks were made between sentences to give the subjects sufficient time for writing them down.

At this point it should be added that while some researchers use the terms *comprehensibility* and *intelligibility* interchangeably, others make a distinction between them. According to Field (2005, 400), "intelligibility is measured by the ability of judges to transcribe the actual words of an utterance, comprehensibility by an overall rating of how easy it is to understand a given speaker." These two concepts, together with accentedness, are defined by Derwing and Munro (2005, 385) in Table 4.

Table 4 Intelligibility, comprehensibility and accentedness (Derwing and Munro 2005, 385)

Term	Definition	Measure
Intelligibility	The extent to which a listener actually understands an utterance	Transcription task (% words correct)
Comprehensibility	A listener's perception of how difficult it is to understand an utterance	Scalar judgement task (from extremely easy to understand to extremely difficult to understand)
Accentedness	A listener's perception of how different a speaker's accent is from that of the L1 community	Scalar judgement task (from no accent to extremely strong accent)

Comprehensibility is thus a subjective evaluative judgement, measured best by means of a rating scale whereas intelligibility is a more objective recognition of words and utterances, which can be tested by rewriting, rephrasing or gap filling. Researchers emphasize that comprehensibility does not always go hand in hand with intelligibility, since in listening comprehension tasks it is usually not necessary for listeners to understand every single word to pick up the gist of the message. Therefore, these two skills should be measured separately. The second part of the experiment described here is an attempt to examine the intelligibility of the two samples of Polish-accented speech to native speakers of English.

4.4.3 Results

The dictation of Speaker A's passage resulted in completely accurate transcriptions written by all the participants. This means that in this case the intelligibility score was 100 %.

The transcription task of Speaker B's version turned out to be considerably more difficult with the mean intelligibility score of 76 %. In each transcription the percentage of words matching exactly those in the diagnostic passage was calculated. Next the mean listener scores were averaged. The words and phrases whose understanding was particularly problematic are presented in Table 5 in the order of decreasing difficulty. The provided figures refer to the percentage of mistranscribed items.

These results demonstrate that the two experimental recordings differ strikingly in terms of their intelligibility, with Speaker A's version being fully intelligible and Speaker B's version remaining in many cases unintelligible to native English listeners.

It is interesting to compare the intelligibility scores of the test items, which were calculated by counting the percentage of forms exactly matching those found in the original versions. As is well-known, apart from the phonetic and phonological features of a given word, other factors relevant for intelligibility include, among other things, contextual transparency as well as the listener's syntactic and lexical knowledge. The least intelligible item was *Disney*, mistranscribed by all the participants, which can be accounted for by the phonetic unpredictability of

Table 5 Experimental results—part II

Test item	Subjects' versions
the Disney family (100 % incorrect)	Dista, Distay, Distin, Destain, Distone
they worked on a radar (90 %)	they walked on a rudder, they walked on a ladder, they walked on water
sister was a nurse (80 %)	was an arse, was an ass, was an aunt
a meal of soup, steak (70 %)	soap stick, steep, a reel of soap stick
Turkey (60 %)	talky, Takhi, Taki
colonel (50 %)	a colonial, Appolonia
captain (50 %)	katung
butcher (50 %)	bachelor
fruit [fruit] (50 %)	Freud
walk in the meadow (40 %)	walk in the middle
Japan (40 %)	Chatham, Chapan
for its climate (30 %)	for their environment, for its time it, for its timing
lettuce (30 %)	the juice, let choose
cabin (30 %)	cave
in the area they liked (20 %)	is there a rear, the rear the light
foreign (10 %)	(?)
mountain (0 %)	(?)

surnames and other proper names in general. This was additionally reinforced by the rarity of morpheme internal occurrences of clusters of voiceless fricatives and nasals present in the Polish English version [d'isnej] and perceived by all the listeners as the [st] sequence, far more frequent in this position in English.

The phrase *they worked on a radar*, with 90 % of incorrect answers, came second in terms of difficulty to understand, due to mispronunciation of both the verb and the noun, followed by *sister was a nurse* (80 %) and *a meal of soup, steak* (70 %). The easiest words to decipher turned out to be *foreign*, *mountain* and *area* (0–20 % of incorrect responses). This result means that not all types of local errors represent the same level of processing difficulty for the listeners, which is strictly connected with their phonological make-up (e.g. the word *mountain*, even when grossly distorted, cannot be easily confused with any other item) and contextual transparency. Thus, the expression *foreign countries*, for instance, created a lexical, syntactic and semantic context which made the adjective comprehensible in spite of its deviant phonetic realization. Clearly, further tests with these and other expressions used in different contexts are needed to establish their intelligibility values.

It is also worth pointing out that, when faced with strange-sounding and unintelligible expressions, listeners adopted several different decoding strategies. The first and the simplest of them consisted in placing a question mark or a hyphen in place of a problematic item, which means the lack of any attempt to interpret it. Another strategy involved writing down exactly what the listener heard, even if it meant creating an utterance which was either ungrammatical (e.g. *for its climate* rendered as *for its time it*), semantically uninterpretable (*lettuce* transcribed as *let choose*) or both (*in the area they liked* written down as *is there a rear* or as *the rear the light*). Finally, some of the

listeners tried to make sense of a given expression by changing it completely to fit the context (*a mountain cabin* interpreted as *a mountain cave*).

5 Conclusion

This paper has argued that the major obstacle to successful communication between foreign learners and native-speakers of English is posed not so much by global segmental and prosodic inaccuracies as by idiosyncratically deviant words, i.e. local errors, which abound in foreign-accented English. Such items, generally disregarded in intelligibility research and in pronunciation training materials, have been shown to affect negatively native judges' ratings of Polish-accented English in terms of its comprehensibility, intelligibility, foreign-accentedness and the degree of irritation triggered in the listeners far more than corresponding ratings of global errors.

Pedagogical implications of this research are clear; it is not the articulation of individual sounds and prosodic patterns of English that should be the focus of communicatively-oriented pronunciation instruction, but rather whole words prone to be commonly mispronounced by language learners⁴.

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⁴ Some pedagogical suggestions as to how local can be eradicated are found in Szpyra-Kozłowska and Stasiak (2010).

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