Foreign Accent Perception

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Polish English in the British Ears

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PREFACE

The phenomenon of foreign accent and its perception have received considerable attention from pronunciation specialists and academic researchers working within different fields of study, such as phonetics, phonology, foreign language teaching, sociolinguistics, psycholinguistics, social psychology, anthropology and even law. The reason for this widespread interdisciplinary interest is caused by the fact that, in addition to revealing the speaker's origin, accent carries significant social connotations and evokes various ethnic, racial, religious and socio-economic stereotypes. In a court of law perceived accentedness and disfluency can serve to assess the credibility of eyewitnesses (Frumkin, 2007). Thus, foreign learners are often judged not only by the way they look or what they say, but also by the way they speak. In other words, non-content features of foreigners' speech provide a wealth of information about them and have a powerful impact on how they are perceived and treated.

Since foreign-accented speech is inevitably non-standard, it tends to be evaluated unfavourably in some cases, which might even lead to discrimination of its users. In this respect foreign accent has far-reaching consequences for immigrants as it affects different spheres of their lives (personal, social, educational and professional). This is reflected in the emergence of a new term, "linguistic profiling," which refers to the cases of employers or landlords using their interlocutors' accent as a criterion for estimating broadly understood suitability and competence (Moyer, 2013:6). In the most extreme cases the users of a given foreign accent can be marginalized and excluded from full participation in the dynamics of the mainstream society.

Many immigrants experiencing discrimination or faced with difficulties caused by their accent invest time and money to reduce it. The number of students enrolled in accent-reduction classes in the United States, Canada or Great Britain has considerably increased over the last few years (Gorman, 2007; Ingram, 2009). Manuals such as "Lose your Accent in 28 Days" also reflect the expanding awareness regarding the implications of sounding non-native. Learners who have reduced their foreign accent in English have become more successful at work, enjoy more job security and obtain financial benefits in English-speaking countries (Ravin, 2004).

In the light of the above, it is not surprising that many interdisciplinary studies have been conducted in order to uncover relevant facts about the nature of foreign accent in English and its perception by native speakers. The majority of research has been carried out in the countries which have a large number of immigrants, such as the United States, Canada and Australia. In the situation when there are nearly 580 000[1] Polish emigrants on the British Isles the perception of Polish-accented English by their native inhabitants has become an important issue which influences Poles' functioning in the target society and therefore deserves careful examination.

Although several studies have dealt with the perception of Polish English by native speakers (Majer, 2002; Scheuer, 2003; Gonet & Pietroń, 2004; Szpyra-Kozłowska, 2005, 2013; Nowacka, 2008), they were limited in scope in terms of the number of participants, analysed phonetic features and selected aspects of foreign accent evaluation. The present work constitutes an answer to the "call for more research to enhance our knowledge of the nature of foreign accents and their effect on communication" (Derwing & Munro, 2005:379). It is the largest today qualitative and quantitative investigation into accentedness, acceptability, intelligibility and comprehensibility of Polish English by three groups of native speakers, the English, the Irish and the Scottish, meant to compare the way in which it is perceived by members of three nations and to establish pronunciation priorities for Poles.

The undertaken research sets itself several goals.

The primary aim is to examine and compare the perception of Polish-accented English by different groups of native speakers. Despite an abundant body of research on foreign-accented English, very few studies have addressed the issue of how English listeners representing different regional varieties react to non-native speech. No comparison of this type has so far been carried out with respect to Polish English. The experiment, which constitutes the core of this monograph, is pioneer with regard to the research problems it addresses and applied qualitative and quantitative methods of data analysis. Firstly, it employs three different groups of English raters to evaluate Polish English on as many as four parameters, i.e. accentedness, annoyance, comprehensibility and intelligibility. Secondly, it surpasses other studies with respect to the number of respondents (78) as well as phonetic aspects of foreign accent analysed in each part of the survey (more than 50). Moreover, it explores several sociolinguistic factors affecting the perception of Polish English, i.e. age,

[1] The Census from 2011 reports 579 121 Polish residents in the UK.

gender, education and familiarity with Polish English, which constitutes novelty in the studies on English spoken with a Polish accent.

An important practical goal pursued in this work is to select phonetic features most relevant for each of the investigated variables in order to formulate recommendations in teaching pronunciation to Poles, immigrants in particular, who intend to interact with the speakers from the British Isles.

The present book also intends to present the major views on the perception of foreign accents found in the literature and verify them against the experimental data. In particular it outlines and discusses the most relevant claims made in previous perception studies devoted to Polish English as well as evidence that supports them. This is considered an important objective because the existing body of research is characterized by contradictory statements regarding foreign accented speech due to differences in adopted methodology (analysed aspects of foreign-accented English, employed diagnostic material, native vs. non-native / expert vs. naïve participants, etc.).

Chapter 1 summarises the main findings of previous studies on native listeners' perception of foreign-accented English. It is meant to reveal both points of agreement and disagreement present in the existing literature with respect to the factors affecting accent perception. An overview of empirical research is offered which focuses on the following listener-related issues crucial to the present study: how listeners using different accents of the same language respond to non-native speech, how familiarity with accented English affects its evaluation and how the judges' age, gender and education influence their assessment of foreign-accented English. Subsequently, the major speaker-related factors involved in the perception of non-native English are investigated. Phonetic features primarily responsible for sounding foreign are discussed together with a few interrelated socio-psychological determinants such as the speaker's involvement in an interaction, their temporary characteristics (emotional state, tiredness, concentration, etc.) and visible ethnic signs. By discussing the above issues Chapter 1 provides background to the experiment reported in subsequent parts. To this end, it defines the necessary concepts key to perceptual studies and discusses briefly theoretical and empirical foundations of the current work.

Chapter 2 introduces the experiment on the perception of Polish-accented English and presents its participants, methodology and instruments. We outline the objectives of the study, discuss the experimental design and provide justification for its component parts. The choice of the diagnostic materials and the speakers is explained alongside the characterization of the listeners and the types of tests administered to them. It is also specified what properties of Polish-accented English are examined in each part of the experiment. The Chapter briefly describes statistical procedures which were employed in the monograph in order to formulate statistically significant observations. They include tests of correlations (Gamma and Spearman's rho), analyses of variance (Mann-Whitney and Kruskal-Wallis) and concordance (Kendall's W).

Chapters 3, 4 and 5 present the experimental results for the Scottish, the English and the Irish listeners, respectively. They follow the same organizational pattern and inform the reader about the circumstances of data collection, characterize the participants and present the obtained results. For each nationality we establish the most accented and the most annoying properties of Polish English and discuss them against the variety spoken by the judges to see whether their evaluations are affected by the raters' linguistic background. The extent to which Polish-accented English is intelligible is measured by comparing listeners' transcriptions and the target texts produced by stimulus providers. Intelligibility lapses are identified and an attempt is made to account for them. Relevant statistical tests are carried out to explore the correlation between accentedness and annoyance, accentedness and intelligibility as well as between intelligibility and comprehensibility. Each chapter finishes with pedagogical implications, i.e. a list of phonetic priorities in teaching English pronunciation to Poles is established for each group of native listeners.

The goal of Chapter 6 is to provide a comparative analysis of the results obtained in the three preceeding chapters. By means of a multisided qualitative and quantitative analysis the similarities and differences in the perception of Polish-accented English by the three groups of judges are examined. The main focus is to explore whether the existing disparities in the evaluation of Polish English can be explained in terms of different accents spoken by the raters. We also take a closer look at how non-linguistic variables (the listeners' age, gender, education and their familiarity with Polish English) affect all 78 respondents' perception. Last but not least, the list of phonetic aspects most relevant to the British listeners (the three groups treated collectively) is compiled. The obtained findings are discussed with reference to the outcome of previous empirical studies on foreign-accented English and Polish English in particular. This allows the author to verify numerous claims made by other researchers. Since Chapter 6 closes the present work, it contains a summary of its content and implications for future research.

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CHAPTER ONE

THE PERCEPTION OF FOREIGN-ACCENTED ENGLISH BY NATIVE LISTENERS: AN OVERVIEW OF SELECTED EMPIRICAL STUDIES

The main purpose of Chapter 1 is to present the most significant theoretical assumptions and findings of the empirical studies on the perception on foreign-accented English by native speakers of this language. Due to considerable differences in the design and methodology of the previous experiments, they have frequently yielded conflicting results which, firstly, are not easy to interpret and, secondly, need to be confirmed. The overview provides thus a theoretical and empirical context for the experiment, discussed in the remaining parts of the present book, which sets out to verify the major claims on foreign accent perception made in the literature.

Chapter 1 begins with an explanation of the concepts on which the present study is based. In section 2 the notions of foreign accent, irritation, intelligibility and comprehensibility are defined and some controversies associated with them are discussed. It is also specified which understanding of the terms in question is adopted in the present work.

In section 3 selected experiments particularly relevant to the perception of foreign-accented English by its native speakers are reported. It is explored what factors linked to the speaker, the listener and the context are involved in the comprehension and evaluation of non-native speech. Points of agreement as well as disagreement found in the research conducted so far are summed up.

Section 3.1. focuses on speaker-related factors. First, phonetic determinants (segmental and prosodic) which strengthen the impression of foreigness and cause misunderstanding are discussed. Secondly, the major views on the relationship between accentedness, intelligibility and comprehensibility are presented. Next, a set of interrelated socio-psychological speaker-dependent variables affecting learners' English pronunciation are dealt with.

Apart from speaker-related factors, numerous receiver's characteristics are claimed to have impact on how English native listeners respond to foreign-accented speech (Gass and Varonis, 1984; Munro & Derwing, 1994; Scheuer, 2003; van den Doel, 2006). They constitute the focal issue of the Chapter because they are analysed in the experiment carried out for the purposes of this book. In section 3.2. the most important linguistic and sociolinguistic issues influencing the perception of non-native English are elaborated on. They include listeners' L1, their familiarity with accented speech and attitude towards the speakers of a given foreign accent. The Chapter ends with a discussion of the less extensively studied influence of age, gender and education on the respondents' evaluation of accented speech.

Section 4 is concerned with research regarding the perception of Polish-accented English. The main focus is on the experiments whose aim has been to establish which phonetic factors contribute most to the impression of foreign accent by compiling the hierarchy of error gravity that emerges from the previous studies (Majer, 2002; Scheuer, 2003; Gonet & Pietroń, 2004; Szpyra-Kozlowska, 2005, 2013).

Due to the vastness of empirical research into foreign-accented English an exhaustive presentation of all accent studies and problems raised is neither feasible nor necessary in the available space.

1. Basic Concepts in the Perception of Foreign-Accented Speech

In this section we introduce the major concepts key to accent studies such as foreign accentedness, irritation, intelligibility and comprehensibility. Due to terminological diversity and the fact that there are often more than one ways of understanding the notions in question, this section sets out to specify which definitions are adopted in the present approach together with the justification for the author's decision.

1.1 Foreign Accentedness

Although even non-phoneticians intuitively know what the term "foreign accent" implies and native speakers are able to trace it in speech as short as a few syllables, or 30 milliseconds in the case of word-initial English stops (Flege, 1999), it has been defined in various ways and so far "no exact, comprehensive and universally accepted definition of a foreign accent exists" (Gut, 2007:75). Munro (1998:139) speaks of "non-pathological speech produced by second language learners that differs in partially systematic ways from the speech characteristics of native speakers of a given dialect." Jenner (1976:167) explains foreign accent as "the complex of interlingual or idiosyncratic phonological, prosodic and paralinguistic systems which characterize a speaker of a foreign language as non-native."

Some researchers (Wójcik, 1980 cited in Major, 1987) claim that, "foreign accent is similar to speech impediment, i.e. they both result in the speaker's failure to constrain the appropriate process(es)." By implication, it should be subject to intervention or corrective and remedial treatment. Yet, foreign accent should not be viewed in terms of speech pathology. According to Flege (1988b:229),

> "foreign accent is a phenomenological experience of listeners that is derived from detectable acoustic (and perhaps visual) differences between native and non-native speakers in the pronunciation of sounds and other speech units."

As a consequence, upon perceiving foreign accent, listeners are able to realize (consciously or unconsciously) that the interlocutor is not "a fellow native speaker."

In some studies on foreign accent the relationship between first and second language (hence L1 and L2, respectively) is mentioned, for instance Piper and Cansin (1988:334) claim that

> "the flawed pronunciation of a non-native speaker of a language has traditionally been attributed to transfer of elements of a learner's first language phonology to the second language phonology."

Lippi-Green (1997) sees foreign accent as resulting from the breakthrough of L1 phonology into the target language. Indeed, it is generally accepted that foreign accented speech reflects the asymmetries between an individual's mother tongue and L2 in the areas of phonemic inventories, allophonic variations and phonotactic constraints (Burleson, 2007). Cunningham (2009) argues that non-native accent is stronger if it is marked with numerous non-native features or if these non-native features are more pronounced.

Many phonologists claim that deviant prosody is what primarily marks a speaker as non-native because it constructs a rhythmic frame of speech, which is language specific and thus prone to mispronounciation by L2 users (Beckman, 1996). Chreist (1969) mantains that inaccurate rhythmic and stress patterns are the essence of foreign accent. As a result, he recommends that students who wish to raise their phonetic competence in

L2 should activate their bodies in the learning process by means of dancing, tapping and moving and should try to imitate beats of the target language.

As observed by Swan and Smith (1987), errors made by L2 learners are not random attempts at producing unfamiliar sounds but rather reflect the L1 sound system of the speaker. This is visible primarily at the segmental level where phonetic inaccuracies (phonemic, distributional and allophonic) originate due to linguistic transfer. Suprasegmental deviations (in syllable structure, stress, rhythm and intonation) are also caused by an interplay between L1 and L2. In other words, foreign accent involves transfer of phonological features from L1 to L2; "when the patterns from the L1 and L2 do not match, and a learner uses an L1 pattern to pronounce an L2 sentence, the difference is heard as an accent" (Zsiga, 2013:459). The primary influence on the nature of an individual's foreign accent should thus be attributed to the phonetic inventory of their L1 (Zhang, Nissen & Francis, 2008; Odlin, 2010). For this reason, listeners with sufficient familiarity with a given foreign accent can recognize the mother tongue of the L2 learner.

Recent theories, i.e. The Perceptual Assimilation Model (Best 1994), the Native Language Magnet (Kuhl & Iverson 1995) and the Speech Learning Model (hence SLM) (Flege 1995, 2003) regarding the emergence and shape of foreign accent are congruent with these premises, but, in addition to speech production, they emphasize the role of perception in acquiring the phonological system of L2. On the whole, they postulate that learners tend to map L2 sounds to L1 phonetic categories and the similarity or dissimilarity between the two determine whether a non-native sound is adequately acquired.

For example, according to SLM, one of the factors which interfere with the acquisition of native-like pronunciation is that the systems of L1 and L2 share "a common phonological space" (1995:242) and influence one another. Already established L1 categories act as a point of reference for L2 sounds and with time (i.e. with age and continued use of L1) are increasingly more likely to assimilate vowels and consonants encountered in L2. The more similar a new category to that in L1, the bigger the probability "equivalence classification" (the basic cognitive mechanism which allows humans to perceive constant categories despite the inherent sensory variation) (Flege, 2002:224) will prevent the formation of new categories in the existing inventory. In such cases merged categories (so called diaphones) reflecting both L1 and L2 input will be created.

Apart from phonetic determinants of foreign accent, numerous non-linguistic factors affect L2 pronunciation. The Critical Period Hypothesis

(Lenneberg, 1967) implies that it is difficult to attain native-like pronunciation in L2 once a certain critical period has been passed[1]. The existence of a critical age has commonly been attributed to the loss of flexibility of the speech organs (Sapon, 1952) and cerebral maturation (Lenneberg, 1967; Scovel, 1969; Penfield and Roberts, 1966).

A number of researchers have explored the relationship between so called "biographical variables" (Birdsong, 2006:11), i.e. the age of learning (AoL) / the age of arrival (AoA), the length of residence in the target language country (LoR) and the degree of foreign accent in non-native speech. The results of the experiments[2] tend to be far from conclusive and their interpretation largely depends on the researcher's perception. While some of them report that the earlier one begins to learn L2, the more native-like their pronunciation will be (Asher and García, 1969; Seliger, Krashen & Lagefoged, 1975; Oyama, 1976; Flege, 1999), others prove that an early start does not guarantee phonetic success (Lecumberri and Gallardo, 2003; Flege, Munro & MacKay, 1995). Yet other studies reveal the possibility of acquiring native-like pronunciation despite age constraints (Bongaerts, Planken & Schills, 1995, Bongaerts, et al., 1997, Bongaerts, 1999; Moyer, 1999; Nikolov, 2000; Muñoz & Singleton, 2007). Similarly, research devoted to the relationship between LoR and the degree of foreign accent in L2 speech has yielded conflicting results. The length of stay in the host country is claimed to correlate inversely with foreign accent (Purcell & Suter, 1980; Asher & García, 1969), but frequently its effect on non-native pronunciation is negligible (Tahta, Wood & Loewenthal, 1981; Thompson, 1991, Flege, 1988a; Flege et al., 2006) as LoR "only provides a rough index of overall L2 experience" (Piske, MacKay & Flege, 2001:197) and thus "the duration of immersion in L2 environment appears to be a poor predictor of foreign accent" (Leather, 2003).

Flege (1988a:76) notes that apart from age and neurological differences between children and adults, there are other parametres that condition the acquisition of native-like pronunciation, namely "the nature of L2 input, social and psychological factors and differing communicative needs." Phonetic accuracy in L2 depends on how much native speaker input as opposed to foreign-accented input is received (Winitz, Gillespie &

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[1] There is no unanimity as to the exact location of a critical age claimed to range from early infancy (Kuhl & Iverson 1995), through childhood (Long, 1990; Krashen, 1973) up to puberty (Johnson and Newport, 1989; Patkowski, 1990).

[2] Since age-related factors lie outside the main thrust of our study, we do not intend to delve into them. Exhaustive overviews of research on the Critical Period Hypothesis can be found in Birdsong (2005, 2006).

Starcev, 1995; Flege, Frieda & Nozawa 2003; Flege & Eefting, 1987; Moyer, 2009) as well as the proportion of L1 vs. L2 use (Flege et al., 1997; Piske & MacKay, 1999; Guion, Flege and Loftin, 2000; Munro, Flege & MacKay, 1996).

Several experiential and affective factors are also relevant determinants of foreign accentedness. Since pronunciation is that element of linguistic performance that immediately identifies a speaker as native or non-native, it is “psychologically loaded” (Moyer, 2004:4). Consequently, adults can find it more difficult to assume a new identity and pursue a native-like pronunciation. Moreover, they may consciously prefer to retain markers of a foreign accent in their speech as an excuse or explanation to any social blunders (resulting from cultural incompetence) they may commit (Piske, 2012). Guiora et al. (1972) argue that the ability and desire to exceed ones’ own “ego boundaries” (p. 112) can have a fundamental bearing on phonological outcome. For this reason, the conscious willingness to identify with native speakers has a positive impact on the learner’s motivation to master a foreign language and sound native like (Stevick, 1978; Piske et al., 2001; Moyer, 2004).

The instruction in the perception of problematic L2 sounds is a relevant factor influencing the phonetic accuracy of non-native speech (Bradlow et al. (1997). On the other hand, it was suggested that some learners may have an innate ability to reproduce accurately sounds from a foreign language (Purcell and Suter, 1980; Gardner & MacIntyre, 1992; Jilka, Lewandowska & Rota, 2008) and that aptitude for oral mimicry may be related to musical talent (Milovanov, 2009; Milovanov et al., 2008)

Two methods are typically used to measure the degree of foreign accent (Gut, 2009). The first one relies on the judgements elicited from (usually) native speakers. They can be asked to estimate the degree of accentedness in non-native speech on a Likert scale, by moving a lever on a response box (ranging from “no foreign accent” to “strong foreign accent”) or in the so called “forced-choice” task, which requires them to attach the label “native” or “non-native” to a given audio stimulus. Even though such evaluations are inevitably impressionistic and subjective, they constitute a reliable indicator of accentedness. For example, in Brennan, Ryan and Dawson (1975) judgements of accentedness have been strongly correlated with the frequency of segmental substitutions present in non-native speech. Moreover, previous research has shown that native speakers tend to concur in their ratings to a considerable degree (Thompson, 1991; Moyer, 1999; Piske et al., 2001). The other way of estimating the degree of foreign accent is by means of instrumental-phonetic measurements of particular phonetic features and comparing them to the target productions.

As Gut (2009:253) notes, even though they are much more objective, “analyses of acoustic correlates of foreign accents are still rare.”

In the present work “foreign-accentedness (accentedness)” refers to the degree of foreign accent perceived by English native raters. This description draws on the one of Chreist (1969:xvii), who states that “the label ‘foreign accent’ is applied to the speech pattern by the listener on the basis of the way he hears the sounds of the talker in terms of his own background.” It is, therefore, influenced not only by the speaker but, above all, by the listener and should be analysed in a linguistic as well as in a sociolinguistic context. To this end, in Chapter 6 it is examined to what extent accentedness judgements are influenced by the receivers’ L1 variety, their familiarity with Polish-accented English as well as their age, gender and the level of education.

1.2 Intelligibility

The term “intelligibility” has been defined in many different ways and, as observed by Jenkins (2000), there is no agreement as to the exact meaning of the concept.

According to Field (2005:401), intelligibility is “the extent to which the acoustic phonetic content of the message is recognizable by a listener.” Similarly, Jenkins (2000: 8) equates intelligibility with “the production and recognition of the formal properties of words and utterances and, in particular, the ability to produce and receive phonological form.” Abercrombie (1949:120) proposes the idea of “comfortable intelligibility” and his definition emphasizes the role of “a pronunciation which can be understood with little or no conscious effort on the part of the listener.” These three definitions represent an approach in which pronunciation is central to successful communication. Adopting this perspective, numerous researchers have explored the impact of L2 speech properties (segmental and suprasegmental) on intelligibility.

On the other hand, many definitions go beyond phonetics and highlight the significance of a network of multiple factors affecting intelligibility. In Catford’s (1950) view, intelligibility is interrelated with “effectiveness,” i.e. the speaker is intelligible if, firstly, his words are properly identified and, secondly, if they obtain a desired response in the listener. The listener might know what the speaker says but might still fail to respond in the way that is expected by his / her interlocutor. At the same time an unintelligible utterance may only be apparently effective because “what is effective cannot be the utterance itself but some other elements in the situation as a whole" (p.8), for example non-verbal clues which might contribute to a better understanding of the speaker's intention.

Therefore, apart from accurate pronunciation, the situational context has a huge impact on intelligibility. It has the following components: personal features of interlocutors (including linguistic, educational and cultural background as well as experience) and physical conditions of the surroundings in which a speech act takes place with their effect on the speaker and hearer. To conclude, in Catford's terms, the message is fully effective only if it is completely intelligible.

Smith and Rafiqzad (1979) introduce a distinction between "intelligibility" and "comprehension." The former is understood analogically to Catford's intelligibility as a proper recognition of words or utterances. In a task that involves completing a gapped text on the basis of what is heard, the more words are properly written down, the more intelligible the speaker is. The definition of "comprehension" is far from being satisfactory, as the authors are rather vague about the scope of its meaning, concluding that "comprehension involves a great deal more than intelligibility" (1979: 371).

Smith and Nelson (1985) propose three terms: "intelligibility," "comprehensibility" and "interpretability." Intelligibility is viewed as the ability to identify particular words or utterances. Comprehensibility involves recognizing the word and its meaning, i.e. a given text is comprehensible if the hearer is able to grasp its significance and make sense of it (for example paraphrase it). Interpretability refers to the meaning beyond word recognition, that is being able to respond to what is said according to the speaker's intentions. The last concept is similar to Catford's "effectiveness" and Kenworthy's (1987:16) "communication," which involves "reading the other's intentions." Communication is much more intricate than intelligibility (which Kenworthy equates with "understandability") and involves using all information available to the listener as well as inferring from the context and applying knowledge and assumptions which both the speaker and the listener share.

Unlike the authors just mentioned, Bambgose (1998:11) uses one term, i.e. "intelligibility" which encompasses "recognising an expression, knowing its meaning, and knowing what the meaning signifies in a sociocultural context." Similarly, in James's (1998:112) interpretation of comprehensibility it is "a cover term to refer to all aspects of accessibility of the content." Intelligibility, on the other hand, overlaps with Smith and Nelson's "comprehensibility" and means "the accessibility of the basic, literal meaning, the propositional content encoded in an utterance." The second component of James's comprehensibility is "communicativity," which refers to discourse and means "access to pragmatic forces, implicatures and connotation."

Dalton and Seidlhofer (1994) discuss intelligibility in terms of "accessibility" and "acceptability." The former is determined not only by the clarity of the communicated text, but also by the interlocutor's expectations and experience with foreign speech and their tolerance of non-standard accents. "Acceptability" refers to the willingness to accept low prestige or foreign accents. The implication is that the extent to which we find foreigner's speech intelligible is also a matter of making some mental effort and overcoming potential bias towards a particular non-standard accent. Lippi-Green (1997) shares this view by stating that sometimes breakdown of communication is not the result of accent itself but happens due to negative evaluation of a given accent and the listener's reluctance to negotiate meaning. In this way the definition of unintelligibility becomes very subjective and deeply correlated with interlocutors' attitudes (which can be explicit or concealed). Therefore, it is problematic to decide whether a given utterance is accessible and acceptable or accessible but unacceptable.

Field (2003:35) proposes two terms: "intelligibility" and "comprehensibility." The former refers to "the extent to which the content of the message is recognizable" (p.35), whereas the latter is understood as "the extent to which a speaker's message is understandable, thanks to a combination of appropriate vocabulary, correct (or approximate) syntax, sensitive pragmatics and mastery of basic features of pronunciation." Thus, for Field intelligibility is a part of more broadly perceived comprehensibility. Munro and Derwing (1997:2) offer a somewhat similar definition of intelligibility as "the extent to which the native speaker understands the intended message."

As can be seen, the definitions which go beyond the recognition of a given word on the basis of its phonetic properties, take into account grammatical, semantic and morphosyntactic clues and emphasise that broadly understood context is of utmost importance in effective language use (Nelson, 2011). Harmer (2001:200) stresses the fact that "shared schemata make spoken and written communication more efficient. Without the type of right pre-existent knowledge comprehension becomes much more difficult." Randall (2007) also claims that background cultural knowledge and familiarity with topic are important predictors of comprehension. In sum, "intelligibility of the person's speech depends as much on the listener and situation as on the speaker's actual pronunciation" (Brown, 1991:54).

Szpyra-Kozłowska (2014) enumerates about 30 factors which have impact on intelligibility, split into the following three categories: speaker-related, listener-related and context-related. The first group includes the characteristics of speaker's output (general language level, fluency, phonetic accuracy, enunciaton, speaking volume and speech rate), his or her familiarity with the listener and involvement in an interaction as well as speaker's temporary traits (mood, state of health, tiredness, concentration, level of stress, etc.). In the second group of factors we find listener's sociolinguistic background (native accent, place of living, age, sex, education and occupation), familiarity with accented speech, foreign languages and the speaker as well as attitude towards the speaker, willingness to communicate and temporary characteristics of the receiver such as mood, emotional state, tiredness, concentration, etc. Last but not least, context-related factors which influence intelligibility encompass grammatical, lexical, syntactic and pragmatic context, the number of minimal and near-minimal pairs a used word co-forms, topic of conversation, physical conditions in which an interaction takes place (particularly noise level) and type of situation (formal vs. informal).

The number of phonetically similar words in a language has often been defined as "neighbourhood density" (Luce & Pisoni, 1998). According to previous studies, word recognition is better for words from sparse neighbourhoods due to smaller competition between these items (Walley, 2007). Therefore, in addition to the message-internal and contextual factors that have impact on a word's intelligibility, there are lexical factors that may increase or diminish the probability of a listener identifying the word accurately (Wright, 2003). Yet, it must be noted that, as pointed out by Szpyra-Kozłowska (in press), despite the existence of a minimal pair member, "in some instances a phonetically inaccurate message can be understood perfectly well since in a specific situation only one of the possible meanings makes sense." This observation is illustrated with the following examples: *I ran away when I saw the angry mob*, in which the last word pronounced with a devoiced final consonant is not likely to be confused with *mop*, and a phrase *a bowl of lice*, which, when said to a waiter in a restaurant, will undoubtedly be interpreted as *a bowl of rice* despite the speaker's confusion between /r/ and /l/. In both cases semantic and pragmatic context prevents miscommunication which could take place due to phonetic inaccuracies.

Kenworthy (1996:122) observes that "the stress pattern of the word is an important part of its identity for the native speaker." She illustrates her claim with the following examples: *writt'en – retain*, *comfor'table – come for a table*, *pro'ductivity – productive tea*. Yet, this evidence is only partially convincing due to its complete decontextualization. While it cannot be denied that the provided pairs of words / phrases do form minimal or near-minimal pairs, they are rather unlikely to trigger confusion. Embedding these items in sentences like *These shoes are very comfortable (*come for a table)* or *Hamlet was written (*retain) by Shakespeare* would greatly aid comprehension. In many real life situations pragmatic context is the key to understanding and can sometimes successfully compensate for phonetic deficiencies.

While grammatical, semantic and pragmatic context can aid comprehension and eliminate ambiguities (Brown, 1991), the argument that it can compensate for pronunciation errors is circular, because context is dependent on how much of the previous input the listener has been able to understand properly (Field, 2005). If a phonetic mistake appears at the beginning of an utterance, it can result in mistaken expectations regarding the content which follows. For example, a mistressed word *foLLOWED* might give rise to the erroneous representation of meaning around the notions *load* or flowed.

One could argue that even though *free* and *three* are minimal pairs, they belong to different grammatical categories and thus their confusion is not very probable, e.g. *She has three (*free) brothers and no sister* or *I slept only three (*free) hours last night*. There might still occur a misunderstanding if we consider a one-word response to the question: A: *How much is it?* B: *Three*. The exchange just quoted was observed by the present author in real life where the substitution of the dental fricative with /f/ resulted in a misunderstanding because the essence of the utterance was drastically changed. The listener thought that she did not have to pay anything, which was not the case.

Therefore, while the importance of context cannot be underestimated, it should not be treated as a universal remedy for phonetic deficiencies because problems with understanding single words (as well as whole phrases) are still inevitable even if these words come embedded in a longer text and the listener is familiarised with the topic of conversation. Consequently, phonetic accuracy remains crucial for understanding.

Kenworthy (1987) claims that assessing the intelligibility of non-native speakers is an easy task which can be achieved without complicated tests or procedures. In her view, impressionistic and subjective judgments given by native speakers as to the difficulty of understanding foreign-accented speech yield reliable and precise results. Moreover, she maintains that such subjective comments are congruent with objective statistical data obtained in the course of carefully designed testing methods and analyses.

In numerous empirical studies the intelligibility of foreign-accented speech has been evaluated through a variety of procedures. Methods employed in assessing it include transcription, subjective rating, dictation, comprehension questions, picture selection in response to a stimulus, word recognition, a cloze test, elicitation of summaries, determination of truth value or asking for repetition (Munro et al., 2006). Each of them has its strengths and weaknesses, but “none on its own can give a complete understanding of the intelligibility of a particular speaker” (p.111). While Bent, Bradlow and Smith (2007) state that intelligibility is influenced by testing methods, the type of testing material (a list of words, sentences or passages), the way of eliciting samples (read vs. extemporaneous utterances), the listening condition and the tasks of the judges, “there is no universally accepted way of assessing it” (Munro and Derwing, 1995a: 76).

In this study intelligibility is treated as the ability of the listener to recognize individual words or utterances (Smith & Nelson, 1985). The present thesis will be focused on primarily phonetic causes of intelligibility breakdown, i.e. an intelligible word or phrase is the one which is properly decoded (transcribed) by the listener. Even though we do not test intelligibility, as should ideally be done, in authentically produced and perceived discourse (Van der Walt, 1995; Szpyra-Kozłowska, 2014), we do not exclude contextual clues so as to possibly best replicate real language use.

A relevant issue which needs to be specified at this point is who the listener is because “the most valuable information about whether a particular speaker is intelligible is likely to come from the people with whom the speaker seeks to interact” (Derwing & Munro, 2006:114). In other words, the definition of “intelligible” is complete only if it is delimited with respect “to whom” (Rajagopalan, 2010). Currently, it tends to be argued that English is used primarily as a lingua franca between non-native speakers. Consequently, the relevance of native speakers of English is frequently undermined (Widdowson, 1994; Jenkins & Seidlhofer, 2000). They are no longer granted the exclusive privilege to set norms or constitute the only point of reference in linguistic matters, since “not only English has become international in the last half century, but scholarship about English has become international: the ownership of an interest in English has become international” (Brumfit, 1995:16). Nevertheless, in the case of Polish migration native speakers remain truly important partners in communication (as employers, customers, business partners, etc.). Therefore, in the present experiment it is examined which properties of

Polish English pronunciation impair intelligibility to three groups of British native listeners, vis. the English, the Irish and the Scottish.

1.3 Comprehensibility

Analogically to "intelligibility," "comprehensibility" has been defined in multiple ways. Even though in some sources the terms "intelligibility" and "comprehensibility" are used interchangeably (Gass and Varonis, 1982, 1984; Piazza, 1980), many scholars make a distinction between the two. Section 1.2. has brought up possible interpretations of "comprehensibility" as assigning meaning to utterances (Smith & Nelson, 1985; Field, 2003). For example, an adequate comprehensibility of *table* means recognizing the word and establishing which category in the real world it refers to in a given context (a piece of furniture, a systematic arrangement of data in rows and columns, a condensed enumeration, etc.). Comprehensibility can be checked by having listeners to paraphrase a passage they have heard or asking them questions about its content.

According to Munro et al. (2006:112), "comprehensibility is the listener's estimation of difficulty in understanding." Previous studies have demonstrated that there tends to be a discrepancy between intelligibility and comprehensibility and that the perceived ease of understanding does not appear to be a good indicator of actual intelligibility, i.e. the number of words or phrases identified accurately (Derwing & Munro, 1997; Munro & Derwing, 1995, 1999; Matsuura, Chiba & Fujieda 1999). The researchers claim that a foreign-accented message can be perfectly intelligible (correctly transcribed) even though phonetic inaccuracies may place some perceptual load on the listener. This means that comprehensibility is linked to foreign accent and, according to Derwing et al. (2004), it is linked to fluency judgements more strongly than assessments of accentedness are.

As Lippi Green (1997) points out, a successful communicative act depends on the involvement of both the speaker and the listener, who share to the same extent the responsibility of exchanging information. Perception is influenced by unconscious prejudices held by interlocutors and, for this reason, attaching the label "hard to understand" to someone's speech is based on highly subjective criteria. In other words, comprehensibility is correlated with the listener's attitude towards the conversational partner and a particular communicative situation (Lindemann, 2005).

Nelson (2011:72) appears skeptical of using the word comprehensibility with this meaning and suggests the phrase "perceived intelligibility difficulty." He points out that for Munro et al. (2006) "comprehensibility" does not refer to accessibility of comprehension (understanding), contrary to what is implied by the suffix *-ity*, but to "a perception on a listener's part of how hard it was to achieve intelligibility" (p.72). He further argues that intelligibility in terms of 'understanding"[3] should not be taken in the ordinary dictionary definition of the latter word because it is not about "comprehending" information, nuance or attitude in a linguistic message, but refers to transcribing particular words or utterances.

While intelligibility concentrates on the final product only, comprehensibility refers to the process through which this final outcome is reached. It is typically measured by means of the listener's estimation of difficulty in understanding a message (expressed on a Likert scale). Sometimes "think-aloud" reports are used in order to pinpoint what disrupts effortless understanding. Apart from measuring comprehensibility via subjective ratings, this variable has also been studied by means of reaction time (RT) in order to obtain objective and more reliable data on perceptual effort. RT provides insight into the difficulty of processing a given stimulus assuming that longer RT implies more effort from the listener; "processes that theoretically require more 'processing resources' or are more difficult to complete will be associated with longer response times" (Borsky, Tuller & Shapiro, 1998:2671).

In this work a distinction between objective and subjective intelligibility (the perceived difficulty in understanding a message) is made and the term "comprehensibility" is used to refer to the latter. The term coined by Nelson, i.e. "perceived intelligibility difficulty" is not employed for the sake of economy and the fact that the distinction between intelligibility and comprehensibility introduced by Munro et al. (2006) has been widely accepted in the literature.

1.4 Irritation / Annoyance

As observed by Johansson (1975), one of the by-products of foreign-accented speech is diverting the listener's attention from the message towards the code. In the literature "the result of the form of the message intruding upon the interlocutor's perception of the communication" has been labeled "irritation" (Ludwig, 1982:275). It can have a varying degree of intensity ranging from undistracted awareness of the speaker's erroneous use of language to constant focus on the form resulting in failure to capture meaning.

[3] As mentioned in Section 1.2., Munro et al. (2006:112) define intelligibility *as the extent to which a speaker's utterance is actually understood*.